Industrial Standardization

January

What Standardization Means to the Navy
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1945

American Standards Association

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Am. Institute of Bolt, Nut & Rivet Mfrs
Am. Institute of Elec. Engineers
Am. Institute of Steel Construction
Am. Iron & Steel Institute
Am. Petroleum Institute
Am. Soc of Civil Engineers
Am. Soc of Mechanical Engineers
Am. Soc for Testing Materials
Am. Soc of Tool Engineers
Am. Transit Assn
Am. Water Works Assn
Asphalt Roofing Industry Bureau
Assn of American Railroads
Automobile Mfrs Assn
Cast Iron Pipe Research Assn
Copper & Brass Research Assn
Electric Light and Power Group:
  Assn of Edison Illuminating Companies
  Edison Electric Institute
Federal Works Agency
Fire Protection Group:
  Associated Factory Mutual Fire Insurance Companies
  Nat Bd of Fire Underwriters
  Nat Fire Protection Assn
  Underwriters' Laboratories, Inc
Institute of Radio Engineers
Lumber Mfrs Group:
  Timber Engg Co (Subsidiary of Nat Lumber Mfrs Assn)
Mfrs Standardization Soc of the Valve and Fittings Industry
Metal Cutting Tool Institute
Nat Assn of Mutual Casualty Companies
Nat Conservation Bureau
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Nat Housing Agency
Nat Machine Tool Builders' Assn
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U.S. Department of Commerce
U.S. Department of the Interior
U.S. Department of Labor
U.S. Govt Printing Office
U.S. Navy Department
U.S. Treasury Department
U.S. War Department

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Am. Council of Commercial Laboratories
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Am. Home Economics Assn
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Am. Institute of Architects
Am. Soc of Heating & Ventilating Engineers
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National Assn of Finishers of Textile Fabrics
Nat Assn of Wool Mfrs
Nat Elevator Manufacturing Industry, Inc
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Nat Lime Assn
Nat Retail Dry Goods Assn
Research Council of the Academy of Motion Picture Arts and Sciences
Soc of Motion Picture Engineers
Shoe Shank Mfrs Defense Group
Structural Clay Products Institute
Textile Color Card Assn of the U.S., Inc
U.S. Cap Screw Service Bureau
U.S. Machine Screw Service Bureau

Company Members—Some 2,000 Industrial concerns hold membership either directly or by group arrangement through their respective trade associations

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Our Front Cover: A battleship of the South Dakota class hurls shells 20 miles.—*Official U. S. Navy Photograph.*

This Issue

The Pictures—Page 1—Charles Phelps Cushing; 2—S. Chertok; 3—Official U. S. Navy Photograph: 4—Charles Phelps Cushing; 6—Drucker-Hilbert; 7, 9, 10—Official U. S. Navy Photographs.

ASA

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Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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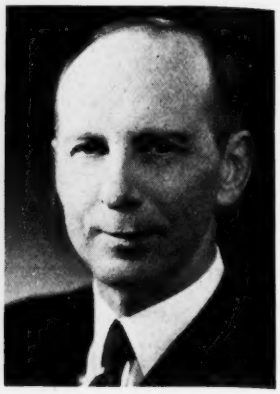
H. B. Bryans
President

George S. Case
Vice-president

H. S. Osborne
Chairman, Standards Council



E. C. Crittenden
Vice-chairman Standards Council

ASA Re-elects Officers for 1945

Annual Meeting Hears Reports of Most Active Year; Importance of Standards in Shipbuilding

A LARGE group of representatives of ASA Members and other trade, technical, and governmental groups who were guests of the Association, met at the Hotel Roosevelt December 8 at the Annual Meeting of the American Standards Association. The meeting heard President H. B. Bryans and Chairman of Standards Council H. S. Osborne tell about one of the most effective and active years the Association has ever experienced. Rear Admiral E. L. Cochrane, Chief of the Bureau of Ships, was the guest speaker, and told what standardization has meant to the shipbuilding program of the nation.

All of the officers of the Association have been re-elected for the coming year, it was announced at the meeting. H. B. Bryans, executive vice-president and director of the Philadelphia Electric Company, was re-elected president. George S. Case, Chairman of the Board of the Lamson and Sessions Company, continues as ASA vice-president. Dr. H. S. Osborne, chief engineer of the American Telephone and Telegraph Company, starts his fourth term as chairman of the Standards Council. E. C. Crittenden, assistant director of the National Bureau of Standards and chief of the Electrical Section, was re-elected for a third term as vice-chairman of the Standards Council.

The war has been making the whole country standards conscious, Mr. Bryans told the meeting. He predicted a big post-war future for standards based on the vigorous leadership of free enterprise, teaming up with interested government agencies. He cited the strong demand for performance standards for consumer goods as well as demands for standards in fields not yet touched upon, pointing to the need not only for national but for international standards in a world in which transport planes must be serviced at airports all over the world; and in which we will be buying and selling mechanical products to scores of countries.

Dr. Osborne reported that in the past 12 months the ASA has approved the highest number of standards of any 12-month period since it was organized 26 years ago—in all, 157 completed jobs. Most of these have been closely related to the war effort. Mr. Bryans' report (p 1) and Dr. Osborne's report (p 4), as well as the address by Admiral Cochrane (p. 7), are reproduced here in full.

Standards — Managerial Tools — Essential to Modern Industry

Annual Report

by Henry B. Bryans[1]

President, American Standards Association

ALL I hope to do today is to touch briefly on some of the events of a year that has been one of vital importance for the American Standards Association and its future. As in 1943, the bulk of our accomplishments this year has been in connection with the war effort. The completion of more than 50 special war jobs in the past 12 months should afford great satisfaction to those faithful war committee members who put in the extra hours necessary to do this work in addition to the heavy pressure of their regular duties. For example, the radio work involving 21 standards was sealed, signed, and delivered to the Armed Forces early in the year; 25 war standards in the photographic field were completed in the first eleven months of this year; and the special war specifications for protective occupational clothing have now reached 21 in number.

Study Place of ASA in Post-War World

The very extent of this war work has made it necessary that we give serious consideration to the place of the ASA in the post-war world—to re-appraise its functions, its methods, its relations to constituent bodies, and its services to government and to industry. Our two most important decisions in 1944 were, first, to broaden the scope of the work so that the ASA can handle any standard or standardization project which deserves national recognition—whether in the field of engineering, accounting, business practice, or consumer goods; and, second, to place a much broader emphasis on the work on consumer goods since we believe such action will be of outstanding importance in the post-war future. We have initiated important discussions of these matters with the government and with industrial groups—but more of this later.

International Standardization Reborn

This year has also seen the rebirth of the larger work of international standardization stopped by the war.

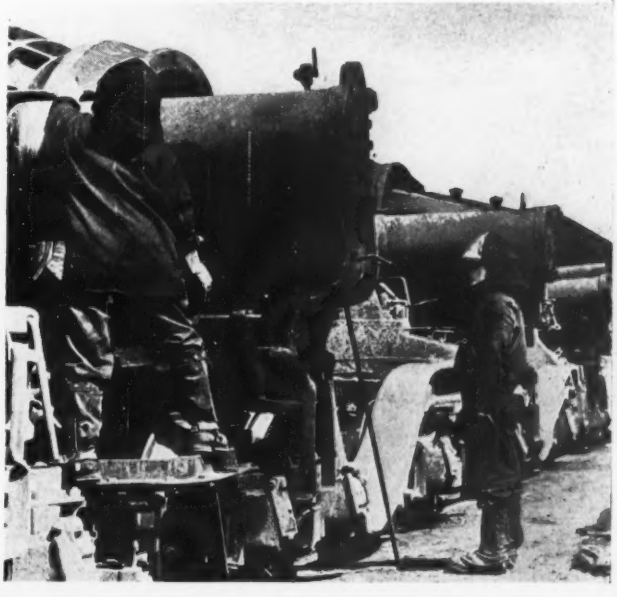
At the time of our last annual meeting, which commemorated the twenty-fifth anniversary of the ASA, members of the Board of Directors came to this room from a meeting at which we had voted to take part in the organization of a United Nations Standards Body to "spark plug" cooperation between the allied belligerent countries in standardization matters having to do with the war and the immediate post-war period. Today that organization exists. Its New York office opened on October 16, under the direction of Herbert J. Wollner, who is with us today. Its membership already includes the United States, Great Britain, Canada, Australia, New Zealand, Brazil, China, and South Africa. We look forward to the membership of Mexico and Russia.

This new international group has been set up to operate for a period of two years with review of the need at the end of that time. All jobs undertaken by it will probably be directly connected with the war, or with the transition period immediately following the war, when there will still be a need for temporary standards. The new group has already been asked to undertake nine jobs.

When we met last year, my predecessor, Mr. Zimmerman, had a pocket-full of cables and radiograms from the national standardizing bodies of other countries congratulating the ASA on its twenty-fifth anniversary. We heard messages from Great Britain, Australia, Canada, New Zealand, Russia, and Brazil, to mention some of them. Today I have a letter from the national standardization body of France re-establishing relations with this country and asking to be brought up to date on the work of the past few years.

There is general agreement by students of the subject that the international aspects of standardization are going to be of greater importance than ever before. That

Clothing for workers represents one of the large groups of War Standards in the ASA program



[1] Executive vice-president, Philadelphia Electric Company.

Standardization of Screw Threads Was a British-Canadian-United States Problem

Here, Elmer J. Bryant, chairman of the U.S.-Canadian mission on screw threads; Colonel H. B. Hambleton, representative of the Ordnance Department; W. L. Batt, U. S. representative on the Combined Production and Resources Board; and James G. Morrow, Canada, vice-chairman of the Mission, meet following presentation of the Mission's reports.

is why a United Nations Standards group had to be organized, even during wartime. In recent months we have been visited by the presidents of the Standards Associations of Brazil and Uruguay. We have been able to give help to new national standards groups being organized in Cuba and in Chile. Mr. Brady, who is head of the ASA office in Buenos Aires, and Mr. Magno-Rodrigues, who is in charge of this work in our New York office, have taken time off to travel extensively through Latin America this year. Mr. Brady also came to New York to discuss ways of increasing the usefulness of our Latin-American work.

Plans for the industrialization of China are progressing despite difficulties of the war and the occupation by the enemy of what was formerly the industrial section of the country. A past president of this Association, Howard Coonley, is in China today carrying the chief responsibility in setting up a Chinese War Production Board, and thus putting Chinese war production on its feet. The Chinese are keenly aware of the basic relation of standards to their production problems and have organized a Chinese Standards Commission. Dickson Reck, formerly head of the Standards Division of the Office of Price Administration, has gone to China to serve as advisor on standards to the Chinese government.

Tremendous Possibilities in Screw Thread Standards

In September, our Assistant Secretary, Mr. Ainsworth, attended international meetings on screw threads in London; and the results of these meetings were considered by a conference of American industry, November 16, in New York. This work on screw threads has tremendous potentialities. Threaded parts go into jeeps, tanks, trucks, gun carriages, gun parts, all kinds of instruments, and thousands of other items of essential war equipment. When I tell you that William L. Batt, vice-chairman for International Supply of the War Production Board, stated that differing standards in the United States and Britain with regard to manufacture of threaded parts have already added at least $100,000,000 to the cost of the war, you will have an idea of the importance attached to this work. As Mr. Batt so aptly epitomized the situation: "Our whole machine-age economy actually is held together by screw threads." Difficulties encountered in lack of interchangeability have run all the way from delays and added production cost in filling lend-lease orders, to the necessity for maintaining vast stocks of duplicating replacement parts in distant war theaters.

May Help in Post-War Trade

The screw thread work is part of the larger picture of cooperation among the United Nations that we are getting this year. It is hard to say how much of this work will be carried over into post-war usage. Although today's coordination of screw threads is at present an American, British, Canadian development, it will certainly be of equal interest to all other countries in the post-war era. International standards on the subject, whether they follow the lines now being developed or not, would constitute a big step in facilitating post-war trade. Anyone can see the value of such standards in a world in which transport planes must be serviced at airports all over the world; and in which we will be buying and selling to scores of countries.

I have the honor today of welcoming eight more national groups into membership:

The Asphalt Roofing Industry Bureau
The Insulation Board Institute
The Douglas Fir Plywood Association
The Shoe Shank Manufacturers Defense Group
The Research Council of the Academy of Motion Picture Arts and Sciences
The National Association of Finishers of Textile Fabrics
The National Association of Wool Manufacturers
The National Federation of Textiles

It is significant that three of these are from the field of consumer goods.

Fifty-eight new companies have affiliated with us in the past 12 months because of the help we could give them in their war-production problems and because of the possibilities they see in standards in the period of post-war readjustment.

From the point of view of actual physical change, most of you know the American Standards Association outgrew the quarters it occupied in the Engineering Societies Building for 26 years, and that last September it moved to the Grand Central Terminal Office Building at 70 East 45th Street. I hope each of you will inspect these new offices at the close of this meeting.

Immediately after Pearl Harbor, the government started requesting so much work from the ASA that it threatened to bankrupt us. Later the government entered into a contract with us under which we have been reimbursed for the past two and a half years for the actual expenditures on government jobs. Since Pearl Harbor, more than three-fourths of our activities have been war work, much at the request of the government, much at the request of industry. During this time we have approved 97 standards under our special war procedure, in addition to many more, under our regular methods.

Distinguished Service Award

In recognition of these war jobs, the Army Ordnance Department notified us last July that it wished to bestow upon us its Distinguished Service Award. One of my most pleasant duties this year was to receive this award on behalf of our Member-Bodies and committees at the meeting on September 14. I should like to quote briefly from General Reimel's address on that occasion. He said:

"In the development of our mass-production methods, and especially in the speedy utilization of our tremendous peace

time industrial facilities for war work, the standards developed through the American Standards Association and its cooperating groups have contributed immeasurably."

The accomplishments of our committees which brought this award have been splendid.

But, looking at the responsibilities of the organization as a whole, we must measure these accomplishments by the needs of the country for such work and by the opportunities that lie before us. Measured by these needs and these opportunities, our record is not too good. The ASA has been subject to criticism, much of which is valid. We have been too slow. We have barely scratched the surface of the job that needs to be done. We should welcome such criticisms.

Government or Industry to Develop Post-War Standards?

I am now permitted to tell you of a conference which is being called at the request and in the name of the Secretary of Commerce of the United States, by the Visiting Committee of the National Bureau of Standards. This conference is being called to consider a report to the Secretary of Commerce dated December 3, 1943 and revised September 15, 1944 by Carroll L. Wilson, Consultant to the Secretary of Commerce, entitled "Standards in Commerce—a Basis for Action."

The invitation is being issued to a relatively few leaders interested in standardization, for the purpose of recommending action that will meet a large volume of criticisms received by the Department of Commerce, leveled at alleged inadequacy of function and lack of coverage by the existing organizations in the standardization field.

Many of the criticisms urge the Department of Commerce to take over and enlarge as a government function the work of standardization hitherto performed by private bodies, principally the American Standards Association and its participating and cooperating agencies. There has been a strong demand for the provision of performance standards for consumer goods and standards in fields not hitherto covered.

This demand has arisen partly as a result of charges of inefficiency against existing standardizing bodies, and partly as a result of the enormous industrial expansion of the United States which, by the creation of new articles and new materials and the great recent progress in science and invention, has called for a corresponding expansion of the function of standardization. It has taken place more rapidly than the facilities for dealing with it have been expanded by the private bodies now in the field.

ASA Scope Broadened to Include Consumer Goods

On May 19, 1944, the Directors of the ASA took the following action:

> "*Resolved*, that in the opinion of the Board, because of the growing importance of standards for consumer goods, the scope and work of the ASA be broadened and clarified by removing the present restrictions which limit the work of the ASA to the engineering field; and that the ASA should be so organized that it can handle any standard or standardization project which deserves national recognition, whether in the field of engineering, accounting, business practice, or consumer goods."

On the same date, other resolutions were adopted proposing changes in the Constitution of the ASA to implement the above resolution of policy, and to bring about the necessary changes in the structure of the ASA.

The Visiting Committee of the National Bureau of Standards, which is calling the conference for the Secretary of Commerce, was created by Congress to watch over and advise on the operations of the Bureau. The five members of the commitee are:

Frank B. Jewett, president, National Academy of Sciences; president, New York Museum of Science and Industry

William D. Coolidge, vice-president and director of research, General Electric Company

Vannevar Bush, president, Carnegie Institution of Washington; director, Office of Scientific Research and Development

Karl T. Compton, president, Massachusetts Institute of Technology; chief, Field Service, Office of Scientific Research and Development

Gano Dunn, president, the J. G. White Engineering Corporation; president, Cooper Union for the Advancement of Science and Art; chairman of the Visiting Committee of the National Bureau of Standards.

Thus, the standardization problems of this country have become so important that the Secretary of Commerce is seeking the advice of a group of important industrial leaders at this conference which will meet in January.

A Challenging Opportunity for ASA

We all recognize the serious shortcomings of the work of the ASA and its constituent groups and we all must be conscious of the fact that if we do not meet the national requirements, some government agency will take over.

But I am by no means disturbed as to the outcome. Rather, it presents a challenging opportunity to the ASA.

As I have already indicated to you, the Board and Standards Council, in cooperation with the Member-Bodies, foreseeing these problems, have been clearing the decks for action. We have a broad program which we have good reason to believe will prove acceptable to industry, to consumers, and to Government.

It goes without saying that all these plans are based on the vigorous leadership of industry.

I myself am a strong believer in the free enterprise system. I have every confidence that if we all buckle down—our Member-Bodies, our technical committees, the Standards Council, and the Board—and equally important, if industry gives us the necessary moral backing and financial support, we can go to town. I believe that leaders in the Government are in sympathy with this point of view and that we shall be assured of full Government cooperation—all provided that we do the job.

War has been making the whole country standards-conscious; and it may well be that this conference will mark the turn of a new tide in the standardization activities of this country. More and more top executives are coming to see that standards are managerial tools, or control devices, that are essential to the conduct and development of modern industry—and hence must be provided for and fostered in the managerial scheme of things. As this viewpoint becomes more general, the ASA, and the remarkable group of organizations which constitute it, have before them an opportunity for service the like of which they have never seen.

In closing, I want again to pay tribute to the men and women on committees who are doing the real work of the Association. It has been a privilege for me to work with them.

Progress in 1944 — Foundation for Greater Future

Annual Report

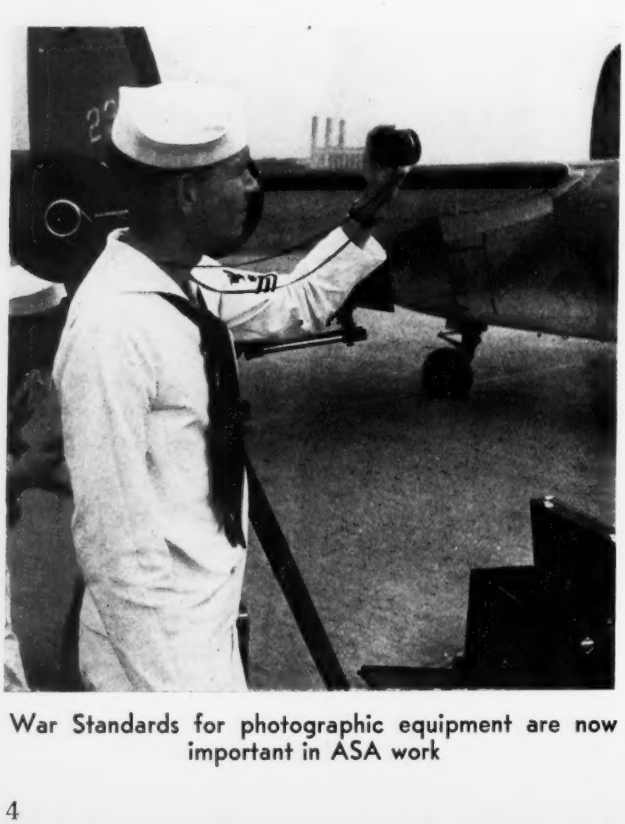
by H. S. Osborne[1]

Chairman, ASA Standards Council

THE volume of work of the American Standards Association continues to mount. Since we last met here a year ago the ASA has approved 157 standards—the highest number on record. With few exceptions the need for these standards has been closely related to the war effort.

Sixty-six of them were handled under the emergency procedure established for war standards. Of these the largest number, 27, related to the safety of workers. Most of them relate to protective clothing and shoes for workers. These cover a wide range: Shoes protecting workers from the dropping of heavy objects, from electric shock, from hot metal, from acid burns; gloves to protect workers from sparks, molten metal, infrared and ultra-violet rays; women's work clothing ranging all the way from Hoover aprons, to coveralls for women welders and for machinists, to the princess-style dresses worn by various classes of women workers.

Another large group of war standards, 25 in number, relate to photographic and cinematographic equipment for use by the Armed Services. This includes standards for exposure meters, specifications and tests for film for 16-millimeter projectors, and specifications and methods of testing for the projector.



War Standards for photographic equipment are now important in ASA work

During the year the job undertaken at the request of the War Production Board standardizing components of military radio equipment was completed and turned over to the Armed Forces. There are 21 of these standards altogether which bring together the requirements of the Army and Navy and the practices and possibilities of the manufacturers. These standards have aided the Armed Forces in the procurement of communication equipment and in its maintenance on fighting fronts all over the world.

Regular Work of ASA Active

While increased use was made during the year of the emergency war standards procedure, there was great activity in standards carried out under the regular procedure of the ASA. The largest group of these covers specifications and tests of a wide range of materials—38 in all. These were submitted by the American Society for Testing Materials. A second large group handled under the regular procedure related to standardization of films and photographic processes submitted partly by the Optical Society of America and partly by the Society of Motion Picture Engineers. These total 29 in number. Another group of eight standards involves safety and covers a wide variety of subjects submitted by professional societies, insurance organizations, government departments, and the National Safety Council. The subjects include allowable concentrations of gases, safety for woodworking machinery and in building construction, protection against lightning, and protection against fires and explosions in factories where magnesium powder or starch is handled.

Quantity Not Criterion of Importance

The importance of the standards is not necessarily measured by numbers. Often a single standard is very important. An illustration of this is the war standard on screw threads of truncated Whitworth form developed at the request of the War Production Board to make possible the production of Whitworth screw threads more easily by American manufacturers while maintaining complete interchangeability with threads of British Standard Whitworth form. This standard is based upon a proposal made by Archibald E. Smith, Senior Ordnance Engineer of the Army Ordnance Department.

[1] Chief Engineer, American Telephone and Telegraph Company.

In view of the anticipated importance of the construction of buildings in the post-war activities, it is of interest to note that this year the ASA approved a standard designed to serve as a guide for municipal officials in the preparation of administrative sections of building codes. This standard is sponsored by the American Municipal Association and the Building Officials Conference of America. The ASA program for the coming year includes two items of special importance relating to buildings. One is the development of building code requirements for prefabricated buildings and the other was initiated at the request of the Building Officials Conference of America as a result of the disastrous fire last summer in Hartford where 163 persons lost their lives. It consists in developing standards for circus tents that will help to prevent the possibility of such fires in the future.

Consumer Standards

While during this war period the work of the ASA is directed strongly toward industrial standards which are of immediate use during the war, it is anticipated that after the war there will be a large increase in the volume of standards for consumer goods. In the basic planning for the future, the Standards Council has given careful consideration to the best organization to take care of this large increase. This morning the Council discussed a preliminary report of a special committee consisting of the Executive Committee of our Advisory Committee on Ultimate Consumer Goods and a group appointed by the Planning Committee of the Council to consider this problem. Their report contemplates the establishment of a new Consumer Goods Executive Committee to be made up of a few top men most interested in consumer goods standards and in the best position to stimulate the development of this work on the part of the various organizations most concerned. This Committee would supplement the work of the present correlating committee on consumer goods which will act as heretofore in helping to organize and coordinate the projects for consumer standards which do not fall within the field of other correlating committees and in recommending approval of the completed standards.

Planning Committee

A year ago the Council authorized the appointment of a Planning Committee to make suggestions as to the job ahead and how the Council best should organize to handle that job. I have just referred to one important job which is being handled by that committee in cooperation with the Executive Committee of the Advisory Committee on Ultimate Consumer Goods. The Planning Committee, under the chairmanship of R. L. Jones, Bell Telephone Laboratories, has made specific recommendations as to the wording of the proposed changes in the constitution that are desirable because of the prospective expansion of the work, particularly in the consumer goods field. These changes, with the approval of the Council and the Board, are being placed before the Member-Bodies for their consideration. The committee has recommended a review of the WPB and OPA Standards and of American War Standards from the point of view that many of them doubtless contain material which could be adopted by industry for use in post-war standards. The staff is cooperating with the WPB and the OPA in a study of the best procedure for carrying out this recommendation. The committee has recommended that correlating committees survey their respective fields and present a program of projects in hand and projects planned for the next two-year period. A number of other recommendations of this committee will be valuable in further organizing and systematizing and speeding up the work of the Standards Council.

The new code for safety in construction was one of the important regular standards approved by ASA during the year

New Work Recommended

One specific recommendation of the committee which should have further mention is that a continuing committee be set up to explore areas which lack but may need American Standards and to make recommendations for appropriate action. That committee, entitled Committee on Program of Work, under the chairmanship of E. C. Crittenden, National Bureau of Standards, presented a thoughtful report at the meeting of the Council this morning, which indicates that we will find this committee to be of continuing help. The specific subjects mentioned by the committee on which additional standards effort seems particularly important include: Building and housing materials, practices for packing goods, drawing and drafting-room practice, the properties of plastics, textiles, the classification of commodities, definitions of technical or trade terms used in vari-

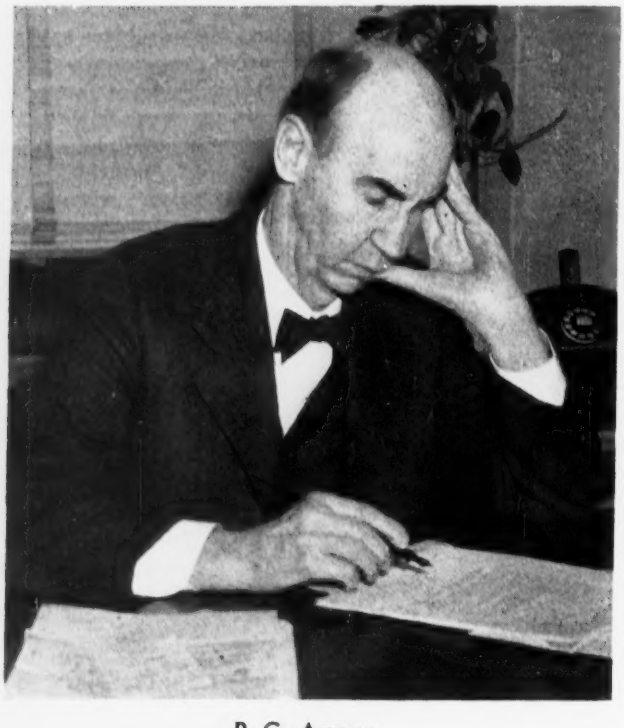
ous industries or trades, fasteners for access panels and doors of vehicles and equipment, methods of testing to determine the effectiveness of protective treatment against fungus attack on materials, stratosphere test chambers, and tables of factors for converting values from one system of units to another. This very wide range of subjects is of interest as indicating the breadth of the field in which ASA can be useful to American industry and to the American people.

Dr. Agnew's 25 Years of Service

A year ago we celebrated the Twenty-fifth Anniversary of the founding of the American Engineering Standards Committee—the name at that time of what is now the American Standards Association. Today, we have another anniversary to celebrate—the Twenty-fifth Anniversary of Dr. Agnew becoming secretary of the organization.

It would not be easy to overstate the contributions Dr. Agnew has made, during these 25 years, to the Association, and through it to the advance of standards in this country and to the world. He has been single-minded in his interest in this subject and with it has shown a devotion and a capacity for work which astounds us more ordinary mortals. I would say that he had devoted more effective energy to the cause of standards than any other two men in the country except for the fact that his own devotion and labor has served as a tremendous inspiration to the members of his staff. For years, Dr. Agnew has been unquestionably the best informed man on standardization in this country, at least, and he speaks on these subjects with an authority that no one else can match.

Completes Twenty-five Years as Secretary of the ASA



P. G. Agnew

The following resolution was adopted by the ASA Board of Directors at its meeting on November 7 and was confirmed at the annual meeting of the Association on the following day:

WHEREAS, December 15, 1944 will be the twenty-fifth anniversary of the assumption by Dr. Paul G. Agnew of his responsibilities as secretary of the American Engineering Standards Committee, now the American Standards Association; and

WHEREAS, Through the 25-year period the Association has grown in membership from five national engineering societies to 85 national professional societies, trade organizations, and governmental agencies; and its field of work has expanded to include technical electrical and mechanical standards, industrial safety codes, standards for the prevention of industrial diseases, building standards, highway traffic standards, consumer goods standards, standards of specifications and tests of materials, photographic standards, nomenclature and graphical symbols, and many others; and

WHEREAS, Through this period Dr. Agnew has been instrumental in helping bring about an increase in the scope and flexibility of procedures of the Association and has built up the staff from its initial size of three to its present size of 70 persons; and

WHEREAS, Dr. Agnew has devoted himself to the work of the Association with extraordinary energy, devotion, and effectiveness; and

WHEREAS, An outstanding characteristic of his work has been a consistent maintenance of the highest standards of integrity in all activities of the staff and in the procedures of the Association, guarding its principles of open dealing, freedom from special favors to any orgapization or group and adherence to the principle of consensus as a criterion in the approval of standards; and

WHEREAS, As a result of his work, Dr. Agnew has built up an enviable reputation, both in the nation and internationally, as an authority in the field of standardization; be it therefore

Resolved by the Board of Directors of the American Standards Association, That the Board congratulates Dr. Agnew on completing his twenty-fifth year of service with the Association, and expresses its appreciation of his service to the Association and to the development of standards in this country and throughout the world.

Ida M. Goldberg Honored for Twenty-five Years' Service

In recognition of twenty-five years of service with the American Standards Association, Ida M. Goldberg was presented with a fifty-dollar war bond on December 29.

What Standardization Means to the Navy

by Rear Admiral E. L. Cochrane[1]

Chief, Bureau of Ships, U. S. Navy

IT is an honor to take part in this Annual Meeting of the American Standards Association, and it is particularly gratifying to be called upon by your secretary to appear in substitution for the Secretary of the Navy, the Honorable James V. Forrestal, whose heavy schedule has precluded his presence here today.

I must confess, however, that in deciding upon the tenor of my remarks, it is not at all clear to me just who is supposed to convert whom to the importance and necessity of adequate standards in commercial affairs, particularly as applied to the Navy.

So far as the Navy is concerned, there never has been any doubt concerning the prime necessity for standards. Our convictions in this regard, along with a good many other fundamentals of the Naval profession, were inherited from the British Navy, and were reflected in the outfitting of the first American privateers, and the first ships of the Continental Navy back in 1776.

Standards Used in Early Days of Navy

Even in those early days it was necessary that certain standard equipment should be utilized in the outfitting of all types of ships. Measured against our notions of such things today, these standards were simple in the extreme. I refer to such things as the dimensions and strength of cordage, the quality of sailcloth, the weight and dimensions of round shot, anchors, blocks, and the details of gun carriages—to mention only a few.

These were things pertaining to the very essence of life at sea in those days, and it should not for a moment be supposed that these standards were not good standards because they were not the product of extensive scientific and engineering research.

They were standards which were developed over a long period of years in the hard school of practical experience. They were standards whose adequacy was measured and tempered by the judgment of able men whose very lives and entire stake in the world—to say nothing of the success of the national missions upon which they were embarked—depended upon the effectiveness of the materials and equipment in their ships.

These comparatively simple standards sufficed for a good many years—in fact up to the time of the introduction of steam and the adoption of iron as the basic material of ship construction. Here a tremendous new field was opened to those concerned with the progress and development of the Navy. However, a number of years had to elapse before standards stretching out toward the lines of this new engineering horizon could begin to appear. The technological developments of civil life on which the Navy was obliged to depend for its own development were not yet ready for the advances in standardization which were made possible—which were, indeed, made necessary—by the opening of these new fields of engineering.

Technical Development

The vagueness of technical development at this time is well illustrated by the following quotation from the Annual Report of the Navy Department which Gideon Welles, then Secretary of the Navy, submitted to President Johnson in 1868.

Speaking of the disposition to be made of the ironclad vessels which had been built for use in the Civil War, many of which were only in the initial stages of their construction at the termination of that War, Secretary Welles stated that,

> "The Department has continued previous arrangements for the custody and preservation of the iron-clad fleet which it has on hand. These vessels can be serviceable only in time of war, and the probabilities are that with a prolonged peace they will, from corrosion and other causes, greatly deteriorate and not unlikely become useless before they will be needed for service. In the meantime their keeping and proper care are attended with considerable annual expense, and at no very distant period a large outlay, almost equal to the construction of new vessels, will be required to put them in sailing and fighting condition."

Weird as it seems today, this view, together with interests of post-war economy, actually resulted in a number of the ships which were on the stocks at the close of the war being allowed to remain there for over 25 years. With the developments of the passing years they were finally completely redesigned and rebuilt. Only the old legislative authorization under which their construction had been initiated, and the names originally assigned to the ships, were retained when the work of construction was finally resumed.

Progress Made After 1880

It was not, therefore, until nearly a generation after the Civil War that any marked development was under-

[1] Representative of the Navy Department on the ASA Standards Council.

taken in the field of standardization in the Navy. Actually it was about 1880, with the commencement of the construction of the "White Squadron," that real progress began to be made on what has since proved to be the foundation of our present series of standards.

Federal Specifications Based on Earlier Standards

During the period from the end of the Spanish-American War until the entry of the United States into World War I, gigantic strides were taken in the development of the nation's most important industrial enterprises. Paralleling this development, the United States Navy, particularly under the leadership of Theodore Roosevelt, experienced a tremendous expansion, all of which was predicated upon what were then considered to be rather complete and—if I may be pardoned for the use of the expression—"pretty good" specifications for a wide variety of materials. As you well know, it was against the background of these specifications that the Federal Specifications were developed in the years immediately following the First World War.

Throughout the greater part of the past twenty years, I have been closely associated with the designing of American men-of-war. It would have been impossible for me to have been engaged for so long a period of time on work of this sort without obtaining an intimate knowledge of the influence of standards upon the development of the United States Navy. I speak with the deepest conviction when I say that nothing of what has been accomplished would have been possible without *dimensional* standards and without *quality* standards.

Too Early Standardization Freezes Designs

On the other hand, it is with equal emphasis and sincerity that I make the assertion that had we accepted too broad a standardization, had we permitted standardization to crystallize our early materials or early designs before they were ready to be frozen, again little that has been accomplished would have been possible.

These two statements may appear to be in complete contradiction of each other. Actually, they are altogether consistent, as, I think, two illustrations will make clear. Considered individually, these are comparatively familiar examples of the point I am trying to make, but their joint significance is something which I believe has never been fully appreciated.

So far as I am aware, the earliest tradition of an association devoted entirely to the maintenance of a body of standards, which has retained its original significance unblemished over a period of nearly 650 years, is the Goldsmiths' Guild of England. Although developed under a royal charter which was granted, I believe, by Edward I about 1300, the Goldsmiths' Guild is essentially a venture both privately sponsored and privately maintained. It is, however, an association which has persevered with the utmost fidelity in the discharge of its responsibility to the British people to guarantee the integrity of the hallmarks affixed to the products of British gold and silversmiths. Incidentally, the Guild also has the responsibility for maintaining the standard of quality for the coinage of the realm.

Nor can the charge ever justly be made that the Goldsmiths' Guild is a passive institution which contents itself with the mere establishment of standards. It demands—and obtains—an impeccable compliance with its standards, and, I am told, is ruthless in its punishment of transgressors—so ruthless in fact that transgressions are almost unknown.

Stern, however, as its enforcement measures may be, the Guild limits itself to guaranteeing only the *quality* of the material, together with insuring the accuracy of the information shown on the hallmarks, disclosing the name of the gold or silver smith, and the place and date of manufacture. The artisan is given complete latitude in developing the design of his product.

In just this same way today, the designer of a Naval vessel enjoys complete freedom—so far at least as standards are concerned—in the selection of forms and methods in which to employ steel and other materials of the required quality guaranteed by the anchor mark of our Naval inspection. From the standpoint of the designer, these are, indeed, excellent standards.

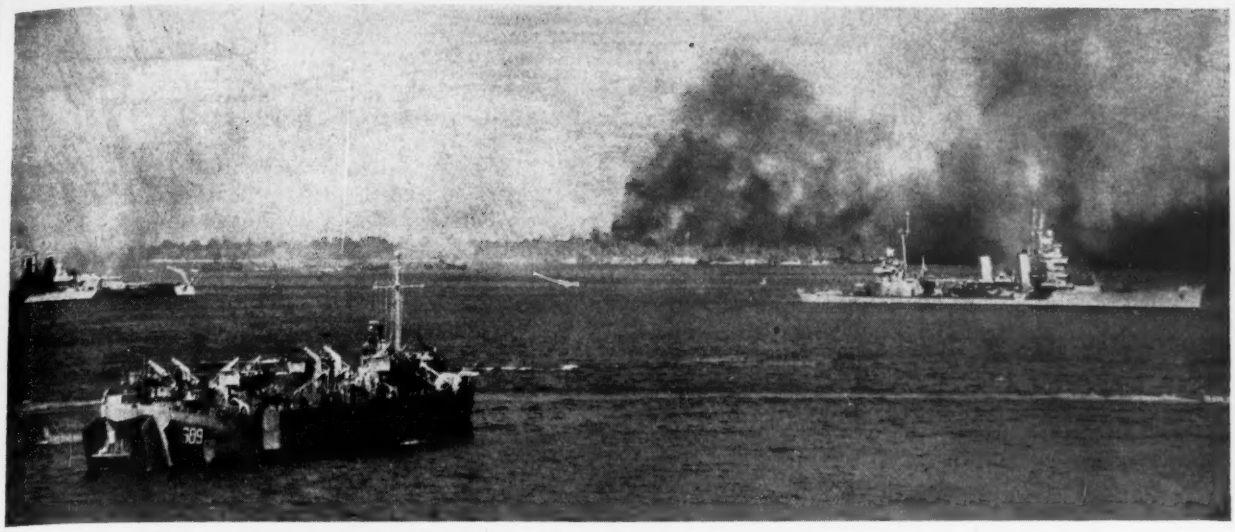
The example of which I have just been speaking illustrates the importance of standards of quality. My second illustration has to do with the danger of too early a crystallization of design standards, and, equally, of the woeful result of not having dimensional standards of a broad scope.

Railroad Gauge Varies in Australia

In the course of an inspection trip which I made in the Far Pacific last September, I had brought home to me with striking force the import of an appalling situation in Australia which was simply the result of a lack of sound standardization.

As you will recall, that great country was settled principally during the 19th century as a group of individual Crown Colonies. Each of these independent Crown Colonies undertook to develop its own railroad system essentially as a governmental enterprise. In all but one instance, each Colony selected a railroad gauge deviating from the British standard of 4 feet 8½ inches. As the result, the gauge from Queensland to Brisbane is 3 feet 6 inches; from New South Wales to Victoria it is the British standard 4 feet 8½ inches; from Melbourne to Adelaide it is 5 feet 3 inches; and in Western Australia it is again the narrow gauge of 3 feet 6 inches. This means that today, in order to permit passengers to travel from anywhere in Queensland, north of Brisbane, to any point west of Adelaide, they must change trains four times. Similarly, if freight is to be moved, it must be unloaded at each change of gauge and loaded into another car, each time incurring a measure of breakage, exposure to pilferage, and always, of course, inevitable delay. I visited a plant in Brisbane which was particularly prideful of the fact that it enjoyed a location where it was served by the 3 feet 6 inch gauge of Queensland railroad and the standard gauge of the railroads of New South Wales. The Australians are painfully aware of the intolerable situation confronting them, but they cannot yet see their way clear to undertaking on a national basis the enormous expenditure which will be required to correct the difficulty.

Incidentally, as a glimmering thought in this connection, I suspect that if a decision as to railroad track gauge could be made to meet the needs of the United States as they exist today—untrammelled by considerations of the tremendous investment in equipment already on hand—it would exceed by a substantial margin the old British standard of 4 feet 8½ inches. Any engineer who looks critically at the bow of one of the



Battleships and cruisers of Admiral Halsey's Third Fleet at Anguar Island September 17, 1944. Small landing craft cluster around the LST in foreground awaiting zero hour.

modern high-powered locomotives will, I believe, be forced to such a conclusion.

To me, the situation in which the Australian railroads find themselves today is a striking illustration of the importance of dimensions which are, of course, the basis of any system of standards. Much has been said in advocacy of the metric system and in support of the desirability of adopting this system for engineering and commercial work even as it has been adopted for scientific work in this country. Personally, I believe that the advantages of the metric system are actually less real than they are fancied. Having been called upon to do a considerable amount of practical engineering work in my time, I have a feeling of great warmth for a unit of length which can be divided into halves, thirds, quarters, sixths, eighths, and twelfths, in preference to one which can be divided only into halves, quarters, fifths, and tenths, and still find an actual square mark on the rule or scale which I may happen to be using. In engineering work today we have wisely—or, brashly, if you prefer—sacked all of that host of units beyond the foot, saving only the mile as the unit of long distances, and the fathom for reasons (I suppose) of nautical tradition. Yards and rods and furlongs do not appear in engineering work of today. This makes it possible for us to get exact dimensional lengths of almost any practicable size. In the field of microscopic dimensions, we have for years been using the decimal parts of an inch, and today, in connection with certain types of work, we speak with complete assurance of tolerances of hundredths of thousandths of an inch.

War Emphasizes Need for Standards

But to return to the broader aspects of the problem of standardization, it is, as I have already indicated, indeed a case of carrying coals to Newcastle to urge the importance of standards on naval personnel during the period of immediate preparation for, and actual conduct of, hostilities. If any of us had lacked a complete appreciation of the true importance of standards, the lessons of our war experience would have corrected the deficiency most convincingly.

Perhaps more forcibly than any other single development of the war, the importance of standards has been brought home to us in connection with the problem of keeping our ships in every quarter of the globe adequately supplied with what the navy originally—and to my way of thinking, unfortunately—elected to call "spare parts," and which we are now referring to as "repair parts." Here again exact dimensional standards and quality standards are absolutely indispensable. I speak with great feeling on this point because today my Bureau is faced with the almost overwhelming task of supplying repair parts for the nearly 100,000,000 shaft horsepower of steam, diesel, and gasoline engines which are propelling the ships of the United States Navy all over the world today—not to mention parts for thousands of other items of equipment. This represents the most complex procurement problem with which we have yet been confronted. It requires standardization of materials of requisite quality, standardization of manufacture to exact tolerances, standards of marking, standards of packing to assure that the material will remain in suitable condition for use despite storage for months on end under the trying conditions of the tropics, standards of storekeeping, issue, installation and operation, standards of acceptability, wear and tear, and return for salvage of used parts, standard methods for reporting usages and expenditures and for translating these reports into further procurement adequate to maintain the necessary flow of replacements. Hundreds of millions of dollars are being expended on this effort and I am happy to be able to say that so far at least we have been able to meet the needs of our ships so that they have not been forced to drop out of the battle line for any lack of repair parts. We have, however, in this respect been running on a slender thread of security, and the success of the effort to date could not possibly have been achieved without standardization, spelled with a capital "S."

Too Early Standardization

On the other hand, there have been times when the push and pressure of the war effort have forced us into

the standardization of ship designs for purposes of quantitative production before they had achieved that highly desirable characteristic of becoming *proved* designs. This has been true particularly of some of our landing craft designs. For example, the design of the 157-foot infantry landing craft—the LCI(L)—was sketched out on the drafting board for the very first time in May, 1942. There was no time to wait for the construction of a pilot model. Full scale production had to be undertaken immediately. The first ship of the design was completed in October, 1942—just five months after the design was initially conceived. Fortunately it worked the first time and has been working well ever since, although, to be sure, developments have been found desirable and have been incorporated in later ships of the class.

This is not an isolated instance. It has been repeated with other types of landing ships—the LSM, for example—and with other types of equipment which have been required in vast numbers before we could be fully satisfied that all of the "bugs" had been worked out of their designs. In every case we took a "calculated risk" that the design would prove to be satisfactory, and in every case standardization on that design has proved to be the key to successful mass production.

Important in Victory

I could go on almost endlessly in this enumeration of ships and naval equipment upon which we have standardized, all of which has played a tremendous part in turning the tide of victory to the Allied Nations. And yet at no time has standardization been permitted to stand in the way of design improvements to increase the striking power of our arms or to strengthen their resistance to the offensive power of the enemy.

Take, for example, the destroyer. Since 1932, when, after the shipbuilding doldrums of the 'twenties, we again undertook the development of the type, we have had seven or eight different destroyer designs, each superior to its predecessor, so that the destroyers which are coming off the ways today—and I say this without the slightest fear of contradiction— are the finest destroyers that have ever been launched by any Navy in the world. Still we are not fully satisfied, and even today we are going forward with the design of an even better destroyer—one which will be able to go with the larger battleship and carrier types which are now being added to our Navy or which we now have in prospect. This is the only way that we can hope to keep the United States Navy in the position of world dominance which it so definitely occupies today.

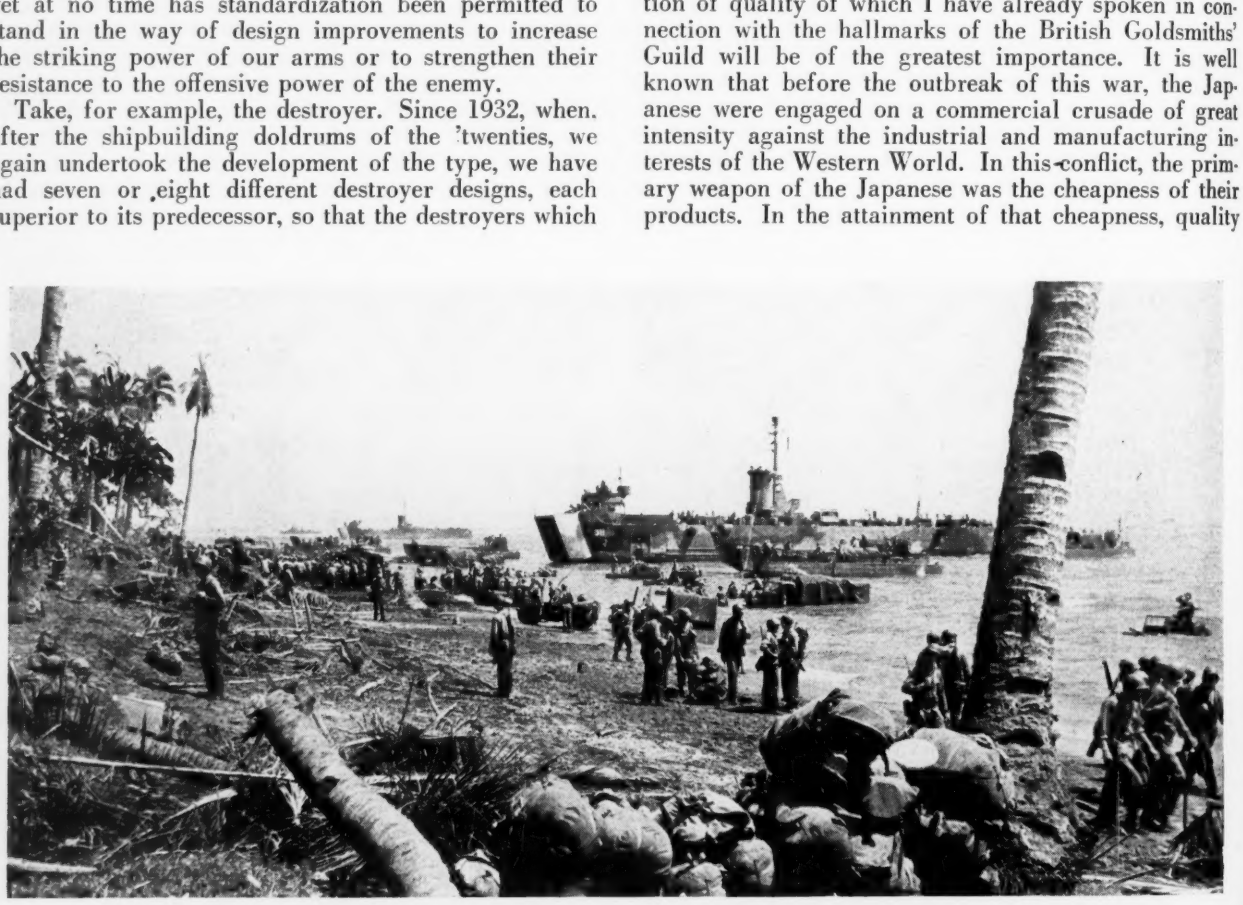
Tool for Progress in Post-War Period

I make this point with great emphasis, because I believe it is of the utmost importance that standardization shall be made a tool of progress for the United States, not only in maintaining the strength of its military and naval arm, but also in supporting its commercial relationships with the rest of the nations of the world in the post-war period.

Heretofore it has been possible for us to busy ourselves almost exclusively with competition with each other within the boundaries of the United States. For this internal trade, nationwide standardization has been of the greatest importance.

But when the war is over, and the United States emerges from it as the leading nation of the world, it will be necessary for us in maintaining that position to seek markets for our products elsewhere in the world and beyond our own boundaries.

For this world trade position, the same standardization of quality of which I have already spoken in connection with the hallmarks of the British Goldsmiths' Guild will be of the greatest importance. It is well known that before the outbreak of this war, the Japanese were engaged on a commercial crusade of great intensity against the industrial and manufacturing interests of the Western World. In this conflict, the primary weapon of the Japanese was the cheapness of their products. In the attainment of that cheapness, quality



The beachhead at Leyte, showing the Navy LSM (Landing Ship Medium), in the background, from which the soldiers on the beach were set ashore.

was sacrificed without regard to the durability or serviceability of the end product.

I am convinced that some standardization of quality for the products of United States manufacture intended for purposes of export in the post-war period will be absolutely essential. I do not mean to say that we should not produce goods of various qualities within varying price ranges in order to meet the demands of markets where sufficient wealth is lacking for the purchase of high quality goods. But some standardization of markings seems to me to be strongly indicated in order to show what quality of goods is in fact being sold and to protect high-quality markets from being flooded and ruined with goods of inferior quality designed for the poorer markets.

This will be a problem in the solution of which this Association can play a very important part. There will be many such problems to be solved in connection with the tremendous scientific and engineering advances which are certain to come in the years immediately following the termination of present hostilities. These advances will present an opportunity for progress in the field of standardization beyond anything we have previously experienced. I am sure that the members of this Association who have been responsible for much of the moving force behind the splendid standards accomplishments of the past several years will remain in the forefront of the days of progress which lie ahead

We of the Navy hope that the Navy will be permitted to share in these technological advances and developments of the future. Unless it *is* permitted to keep abreast of them, it will be exceedingly difficult for the Navy to retain its present position of supremacy.

It is a benighted man, indeed, who would suppose that because we have built a Navy which *today* can stand up and hold its own against any possible antagonist, we can keep that dominating position by simply sitting tight and holding on to what we now have. If you want to coast, you can go in only one direction —and that is downhill.

I hope, therefore, that we can all look forward to a continuance for many years of the close teamwork which has been built up between the Navy and this Association. Together this partnership has achieved some fine results. Together it can achieve still greater ones in the years to come.

South American Representatives Study ASA Safety Work

Government representatives from Brazil, Chile, and Uruguay conferred with ASA staff members in December on the importance of American Safety Standards to industry, insurance groups, and to state and federal governmental agencies in organizing national programs for the prevention of accidents. The South American representatives were members of a group, which also included representatives from Mexico, Peru, and Puerto Rico, appointed by their governments to study industrial accident prevention, employment of women and children, and administration of labor laws in the United States. They are spending from three to six months in the United States working under the direction of the Women's Bureau and the Division of Labor Standards of the U. S. Department of Labor. They have been invited, by the state labor departments of New York, Rhode Island, North Carolina, and Wisconsin to study the industrial safety and health work, the women's and children's divisions, workmen's compensation administration, and factory inspection activities in those states.

The members of the group who visited the ASA are:

Dr. Milton Fernandes Pereira, director of the Accident Prevention Division, National Department of Labor, Brazil

Mr. Julio Figueroa Fernandez, secretary-general of the Industrial Accident Insurance Fund, Chile

Mr. Samuel Oscar Blixen Flores, Inspection and Accident Division, National Insurance Fund, Uruguay

They were interested in ASA procedure—in the development and approval of safety standards as well as the extent to which these standards have been used as the basis of state codes and regulations.

The problems arising from the fact that some states have done more than others in adopting safety regulations were of special interest to all of the South American representatives. Because of the different state regulations, United States manufacturers usually quote the price for a machine separately and list in addition the prices for the safety equipment to go with it. This offers a serious temptation to the purchaser, where legal safeguards do not exist, to buy the machine alone and not pay the additional cost for the safety equipment. The South American representatives believed that national or even international standards would be of substantial aid in the solution of this problem. Such standards would make it possible for South American purchasers to judge the serviceability of the machines and safeguards they buy. By preventing misunderstandings about what equipment would or would not do, such standards would also promote greater friendship between the people of the Americas, the group declared.

Errata in December Issue

With regret, INDUSTRIAL STANDARDIZATION calls attention to two errors in the articles on the United States-Canadian Screw Thread Mission in the December issue.

On page 249, Elmer J. Bryant is identified as vice-chairman of the Joint United States-Canadian Screw Thread Mission. Mr. Bryant was chairman of the Mission.

On page 256, in the report on Cylindrical Fits, B4, the name of Gustaf Carvelli was inadvertently omitted from the list of members of the drafting committee. The complete list of members of this committee is:

J. E. Lovely, Jones & Lamson Machine Company, Springfield, Vt.
W. H. Gourlie, R. T. Palmer Company
Col. H. B. Hambleton, Army Ordnance Department
Gustaf Carvelli, Wright Aeronautical Corporation
John Gaillard, American Standards Association

Industry Studies Standards for Parts for Civilian Radios

by J. I. Cornell[1]

Chairman, Committee on Fixed Capacitors, Radio Manufacturers Association

Address presented at the Joint Fall Meeting of the Institute of Radio Engineers and the Radio Manufacturers Association Engineering Department, Rochester, New York, November 13.

ONE of the most important considerations in the design of post-war radio and electronic equipment should be the use of standard components, and the work of the Engineering Committee of the Radio Manufacturers Association on fixed capacitor standardization is now going forward to provide such standard components.

This work began early in the summer of this year in response to repeated demands from various quarters in the industry for a standardization program. As one manufacturer put it, "This standardization is a matter vital to our industry's growth."

Standardization is defined in the Encyclopedia Britannica as "the establishing by authority, custom or general consent, of a rule or model to be followed."

Many people who now oppose new forms of standardization accepted without a second thought standard procedures previously established which in their day were more radical than the new forms they oppose.

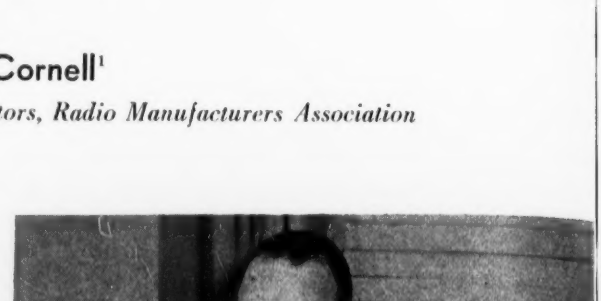
Trend Toward Deliberate Action

Most standards come about through a more or less unconscious evolutionary process. Since the introduction by scientific management of mass production methods, there has been a steady trend toward the development of industrial standards through conscious deliberate action.

Every progressive industrial plant is carrying on standardization of its products and processes and its competitive success depends largely upon the cleverness and thoroughness with which it has studied and solved these problems. Sound plant standards are an essential to mass production.

Standardization within individual companies gives rise to collective standardization for entire industries. In standardization work, the human element is far more important than is generally realized and much more difficult to solve than are the technical problems.

One of the chief functions of standardization is to remove conditions which lead to controversies, such as parts that do not fit because they either have not been properly specified or because the specifications have been incorrectly interpreted. The test of a good standardization program is the framing of the specifications so concisely and clearly that any competent engineer or testing laboratory can interpret them without danger of misunderstanding.



The techniques by which acceptance tests are to be made should be so clearly defined that any competent inspector can determine readily and definitely whether the product conforms to the standard or is classified as a reject.

Advances in technology are continually binding industries closer together, requiring more standardization which in turn eliminates many obstacles that would otherwise stifle such progress.

Engineering Committee Expects Greater Standards Program

Under non-standard conditions, excessive variety of components often results from repeated design of the same component by different men because there was no record kept of what had already been designed. This criticism applies to the radio industry where in pre-war times the variety of tubes, resistors, coils, capacitors, and many other components was limited only by the desires or fancies of hundreds of engineers and by the ability of the parts makers to tool for them. Possibly this haphazard procedure was an adjunct to pioneering and growth.

The war has demonstrated to the industry the importance of parts simplification and standardization with all the many advantages that accrue to such a program. It is the hope of the Engineering Committee of RMA that in the post-war period we will progress and not go backward in this connection.

[1] Chief Engineer, Solar Manufacturing Corporation.

It is the aim of the committee on capacitor standardization in presenting our proposals that every group substantially concerned participate in deciding what the provisions of these standards shall be so that they will be a truly representative consensus of the desires of the industry.

Subcommittees Work on Standards

Three subcommittees of the Capacitor Committee of the RMA Engineering Department are now working on capacitor standards and as a result of their work four new draft standards have been submitted for consideration by the Receiver Section of the RMA Engineering Department. The three subcommittees cover:

Fixed Mica Dielectric Capacitors—A. DiGiacomo, Micamold Radio Corporation, *Chairman*
Fixed Paper Dielectric Capacitors—Louis Kahn, Aerovox Corporation, *Chairman*
Dry Electrolytic Capacitors—Harry Rice, Sprague Electric Company, *Chairman*

The proposed specifications, for capacitors used in broadcast receivers and other civilian radio and electronic applications, include proposed specifications for fixed mica dielectric capacitors; for fixed paper dielectric capacitors in hermetically sealed cases; for fixed paper dielectric capacitors in tubular non-metallic cases; and for polarized dry electrolytic capacitors.

In preparing these proposed specifications, the committees have spent much time and care in formulating proposals in line with what has seemed to be the radio industry's desires and they should therefore meet with general acceptance. The committees have endeavored to steer a middle course between the extreme demands of the equipment designers on the one hand, and the rather loose specifications proposed by some of the capacitor designers on the other hand.

We have noted a wide divergence in specifications in the industry due, I feel, in a large measure to the tendency for engineers to incorporate into specifications requirements intended to cover some product characteristic which gave rise to field trouble. Usually these overemphasized test requirements result in specially tailored components and prevent the use of standards. Tight specifications intended to assure better control often defeat their own end in that they complicate manufacturing processes and result in inferior products. I could enumerate here many such conditions that have come to my attention in the past but time does not permit.

One needs only to thumb through the handbook of the Society of Automotive Engineers to be impressed with the amount of standardization that has been accomplished in the industry which is the outstanding example of the benefits of mass production and standardization.

In summarizing the requirements of a good standard, the following points should be remembered:

(1) There must be a level of conditions which remain stable.
(2) There must be agreement on performance requirements.
(3) There must be sufficient flexibility to provide for new and improved conditions.

Dr. P. G. Agnew of the American Standards Association has said: "Sound standardization is dynamic, not static. It means, not to stand still, but to move forward together. By facilitating the flow of products through industry and commerce, standards help to maintain what an engineer would call 'dynamic stability in industrial processing.' The danger of stagnation lies, not in the use of standards, but taking a fixed mental attitude, instead of always keeping the mind receptive to new ideas."

Features Included in Tentative Standards

In the tentative standards offered by the RMA Capacitor Committee, we have included the following features:

(1) Performance specifications for each classification of product.
(2) Definition of quality characteristics and testing procedures required for each.
(3) Component type designations with proposals for uniform marking.
(4) Standards for case sizes with tolerance.
(5) Inspection routines.
(6) Preferred ratings.

Copies of the several tentative standards have been mailed to all of the radio manufacturers and on behalf of the committee I wish to express my sincere hope that these will be given serious consideration and that we may have the benefit of their comments and suggestions.

David L. Lindquist

David L. Lindquist, for more than 33 years chief engineer of the Otis Elevator Company and for many years active in standardization work in the American Standards Association, died November 11.

Mr. Lindquist was responsible for the development of the gearless traction elevator, and the micro self-leveling elevator, with the later development of signal control, permitting high car speed; also the collective control for automatic operation by passengers in apartment-house elevators.

For his achievements he received the John Ericsson Medal in 1940 awarded by the American Society of Swedish Engineers and in June of the same year he was honored by the King of Sweden, who made him a Knight of the Royal Order of Vasa.

Mr. Lindquist was a member of the ASA Sectional Committee on the Safety Code for Elevators, Dumbwaiters, and Escalators, A17, and of the Sectional Committee on Wire Ropes for Mines, M11.

Nation-Wide Representation In New ASA Company Membership

The closing month of 1944 brought 12 new companies, representing the East, West, and Midwest, into the membership of the American Standards Association. The Association welcomes the following as Company Members:

A B Chance Company, Centralia, Missouri
Colby Steel & Engineering Company, Seattle, Washington
Dexter Manufacturing Corporation, Narrowsburg, N. Y.
Electronic Transformer Company, New York, N. Y.
Federal Manufacturing & Engineering Corporation, Brooklyn, N. Y.
Fish-Schurman Corporation, New York, N. Y.
Hydropress, Inc., New York, N. Y.
J. A. Maurer, Inc., New York, N. Y.
Michigan Wheel Company, Grand Rapids, Michigan
Preco, Inc., Los Angeles, California
Star Cutter Company, Detroit, Michigan
Warren McArthur Corporation, New York, N. Y.

Electrical Committees Report on Work—1944

REPORTS of the sectional committees on electrical projects under the supervision of the ASA Electrical Standards Committee show that most of the work on peacetime standards has remained dormant during 1944. Four revised standards were completed during the year, however, providing new editions of the American Standard Terminal Markings for Electric Power Apparatus, C6.1-1944; Part III of the Code for Protection Against Lightning, C5.3-1944; the American Standard for Insulator Tests, C29.1-1944, and the American Standard for Lightning Arresters, C62.1-1944. New work to provide up-to-date editions of earlier standards is planned by six of the electrical committees for 1945. Six American War Committees have been working in the electrical field during the year. These cover such widely divergent subjects as electric indicating instruments; methods of measuring radio noise; resistance welding equipment; and machine tool electrical standards.

Reports of the committees are summarized below. The organization sponsoring the work is listed following the report of each committee. The names of the chairman and secretary of the committee are given in those cases where the Electrical Standards Committee is acting as sponsor.

National Electrical Code (C1)—

A meeting of the sectional committee, planned for the week of May 14, 1945, will consider reports of subcommittees to determine upon a text for recommendation as the next edition of the National Electrical Code. Soon after the first of the year, it is planned to publish reports of the Article Subcommittees for consideration by the electrical industry, and others concerned, as well as by the sectional committee. The reports will probably be published as a supplement to an issue of the *News Bulletin* of the International Association of Electrical Inspectors.—*National Fire Protection Association.*

National Electrical Safety Code (C2)—

Safety Rules for the Installation and Maintenance of Electrical Supply Stations, C2.1-1941

Safety Rules for the Installation and Maintenance of Electrical Supply and Communication Lines, C2.2-1941

Safety Rules for the Installation and Maintenance of Electric Utilization Equipment, C2.3-1941

Safety Rules for the Operation of Electric Equipment and Lines, C2.4-1939

Safety Rules for Radio Installations, C2.5-1940

No revisions are planned for any of the five parts of the code which have been approved by the American Standards Association. Because of the acute paper shortage, the codes will not be issued in a single document. The parts are now published separately. A Discussion Handbook to accompany Part 2 has been published giving background information, tables of properties of conductors, sags, etc., and nomographs and charts. Although not an approved American Standard itself, the discussion will be helpful to users of Part 2 of the Code.—*National Bureau of Standards.*

Code for Protection Against Lightning (C5)—

Part II, covering Protection of Structures Containing Inflammable Liquids and Gases, was revised and approved as American Standard this year. The National Bureau of Standards reports that it is planning to print a new handbook containing the old Parts I and II and the new Part III. A third sponsor, the National Fire Protection Association, was added for this project this year, and the sectional committee is now being reorganized.—*American Institute of Electrical Engineers; National Bureau of Standards; National Fire Protection Association.*

Terminal Markings for Electric Power Apparatus (C6)—

A new edition of this code was published in 1944.—*National Electrical Manufacturers Association.*

Insulated Wire and Cable (C8)—

Only a few minor problems have been presented to the committee this past year, and in each case it has been decided that no change in specifications should be recommended. No meeting of the committee has been held during the year.—*W. F. Davidson, Chairman; C. S. Gordon, Secretary.*

Hard-Drawn Aluminum Conductors (C11)—

No recommendations for revisions in the 1927 edition of the standard have been received.—*American Institute of Electrical Engineers.*

Code for Electricity Meters (C12)—

There has been no activity on this project during the past year.—*National Bureau of Standards; ASA Electric Light and Power Group.*

Radio (C16)—

Until security regulations are somewhat relaxed and time is available to consider in detail the findings of the ASA War Committee on Radio and of the Radio Technical Planning Board, it is believed inadvisable for the Sectional Committee on Radio to sponsor further standards. As soon as the European phase of the war has terminated, this subject should come up again for consideration.—*Institute of Radio Engineers.*

Dry Cells and Batteries (C18)—

There has been no activity on this project during the past year.—*National Bureau of Standards.*

Industrial Control Apparatus (C19)—

No revisions to the standard approved in 1943 have been suggested.—*American Institute of Electrical Engineers; National Electrical Manufacturers Association.*

ESC Re-elects Officers

The Electrical Standards Committee, coordinating committee for all electrical projects of the American Standards Association, re-elected its officers for the coming year as follows:

Charles Rufus Harte, American Transit Association, *Chairman*

Sidney Withington, Association of American Railroads, *Vice-chairman*

J. W. McNair, American Standards Association, *Secretary*

Insulators for Electric Power Lines (C29)—

A meeting of the committee in February 1944 revised controversial paragraphs in the proposed revision of the American Standard Insulator Tests (C29a-1930) on which the committee had failed to agree at meetings the year before. As a result, the revised standard was given final approval as American Standard C29.1-1944 in September.

A recommendation to transfer the work on standardization of roof, floor, and wall bushings from the scope of this project to the project on Apparatus Bushings (C76) has not been acted on because of failure to win a majority vote in favor of the change.—*J. A. Brundige, Chairman; R. M. Havourd, Secretary.*

Specifications and Standards for Electrical Devices and Materials with Relation to Fire and Casualty Hazards (C33)—

The status of this project remains the same.—*Underwriters' Laboratories.*

Mercury Arc Rectifiers (C34)—

Work on a standard is nearly completed by a committee of the American Institute of Electrical Engineers which will then submit the standard to the sectional committee for formal action. Reorganization of the sectional committee has just been completed.—*American Institute of Electrical Engineers.*

Railway Motors (C35)—

No suggestions have been received for revision of the standard approved in 1943.—*American Institute of Electrical Engineers.*

Power Switchgear (C37)—

The subcommittee is still working on a revision of the 1941 edition of the proposed American Standard for A-C Power Circuit Breakers (C37.4/9). Efforts are still being made to reach agreement on three of the 33 questions on which differences of opinion have been expressed.

It is understood that a proposed revision of the American Standard for Automatic Stations (C37-1937) prepared by the American Institute of Electrical Engineers will soon be referred to the committee for consideration.

Sectional committee work on high-voltage fuses and current-limiting resistors, switchgear assemblies, and metal-enclosed switchgear is awaiting outcome of AIEE committee work.

Inactive projects, on which ASA standardization activity would be premature, are:

Air switches (C37.3)
Large air circuit breakers (C37.11)
Power connectors
Network protectors

—*H. R. Summerhayes, Chairman.*

Storage Batteries (C40)—

The standard approved in 1928 is badly in need of revision. The time may now be at hand to undertake the revision, although queries have not produced any results. The sectional committee was reorganized in 1940.—*American Institute of Electrical Engineers.*

Definitions of Electrical Terms (C42)—

Many suggestions for revisions and additions to the American Standard published in 1941 have already been received. For such a revision, it will be necessary to completely reorganize the committee and this cannot be done at present because Chairman C. H. Sanderson is now on the Pacific Coast on government work.—*American Institute of Electrical Engineers.*

Rolled Threads for Screen Shells of Electric Sockets and Lamp Bases (C44)—

The Electrical Standards Committee has been asked to reaffirm the 1931 edition of this standard for the next three years.—*American Society of Mechanical Engineers; National Electrical Manufacturers Association.*

Rotating Electrical Machinery (C50)—

The revised standard was issued in 1943. Because of the war, Committee C50 has had no meetings during the past year, and has been inactive in the preparation of new or revised standards.

Introductions to the standard, in Spanish and Portuguese, have been prepared and printed for distribution with the standard in Latin-American countries.—*L. F. Adams, Chairman; E. B. Paxton, Secretary.*

USNC Holds Annual Meeting

The U. S. National Committee of the International Electrotechnical Commission, which works in close contact with the ASA Electrical Standards Committee, held is annual meeting November 10, and re-elected its officers for the coming year:

E. C. Crittenden, National Bureau of Standards, *President*
L. F. Adams, National Electrical Manufacturers Association, *Vice-president*
H. S. Osborne, Member-at-large, *Vice-president and Treasurer*

The membership of the U. S. National Committee of the IEC is the same as that of the Electrical Standards Committee, with the addition of representatives of the American Society of Mechanical Engineers and individual technical experts.

At the meeting the chairman reported that due to the war there has been no activity in the IEC work.

Electric Welding Apparatus (C52)—

A proposal that the two approved standards under this project be temporarily withdrawn is being given final consideration by the Board of Directors of the American Welding Society, sponsor for the project. If approved, the recommendation will be referred to the ASA Standards Council for final action. The proposal was made because work is going forward on a war project for resistance welding apparatus. It is expected, however, that it will be some time before these standards can be changed over to peacetime standards or before the arc welding standards can be revised. It has seemed desirable, therefore, to withdraw these obsolete standards.—*American Welding Society.*

Capacitors (C55)—

There is no change in the status of this project.—*American Institute of Electrical Engineers.*

Transformers (C57)—

No revision in the standards approved in 1942 is planned.—*V. M. Montsinger, Chairman; E. B. Paxton, Secretary.*

Lightning Arresters (C62)—

A new edition of this American Standard for Lightning Arresters has been approved and is being published.—*American Institute of Electrical Engineers.*

Carbon Brushes (C64)—

A sectional committee has been organized and the personnel has been approved. The committee will soon consider a proposed revision, prepared by the sponsor, of the present American Standard.—*National Electrical Mauufacturers Association.*

(*Continued on Next Page*)

Preferred Voltages 100 Volts and Under (C67)—

The committee was enlarged during the year to obtain better representation of the radio interests. A proposed American Standard has been sent to letter ballot of the sectional committee.—*Chairman, C. A. Powel.*

Sphere Gaps (C68)—

The AIEE committee, identical with the sectional committee, is now at work on a revision of the standard approved by ASA in 1942.—*American Institute of Electrical Engineers.*

American War Standards

Replacement Parts for Civilian Radio (C16)—

One standard, Volume Controls (Home Receiver Replacement Type), C16.10-1944, was approved during the year as an American War Standard.

Electric Indicating Instruments (C39)—

During the year a revision was approved of the American War Standard Electrical Indicating Instruments (2½- and 3½-Inch, Round, Flush-Mounting Panel-Type).

Specifications for Design and Construction of Resistance Welding Equipment (C52)—

The two proposed standards under this project, one for Resistance Welding Electrodes and the other for Resistance Welding Machines and Controls, which were printed and distributed to a general canvass of industry, have been referred to subcommittees for revision on the basis of comments received. New drafts have been prepared and are expected to be submitted soon to the ASA for approval.

American War Standards (Continued)

Methods of Measuring Radio Noise (C63)—

Following a request from the Joint Coordination Committee on Radio Reception of EEI, NEMA, and RMA, an industry-government conference was held on August 16, 1944, to consider the desirability of initiating a war project on this subject. The conference unanimously recommended that such a project be undertaken, and on September 12 the chairman of the Standards Council initiated the war project. A war committee is now being organized.

Machine Tool Electrical Standards (C74)—

Closing of a ballot of the War Committee on a proposed revision of the American War Standard has been delayed because it is understood that further revisions are contemplated.

Radio (C75)—

The following nine American War Standards were approved during the year:

- Power-Type Wire-Wound Rheostats (C75.9-1944)
- Variable Wire-Wound Resistors (Low Operating Temperature) (C75.10-1944)
- Crystal Unit CR-1 ( )/AR (C75.11-1944)
- Fixed Ceramic-Dielectric Capacitors (Temperature Compensating Types) (C75.12-1944)
- Dynamotors (C75.13-1944)
- Porcelain Radio Insulators (C75.14-1944)
- Toggle Switches (C75.15-1944)
- Fixed Paper-Dielectric Capacitors (Hermetically Sealed in Metallic Cases) (C75.16-1944)
- Method of Noise-Testing Fixed Composition Resistors (C75.17-1944)

Standards Issued by Associations and Government

(For new American Standards see pages 17 and 25)

For the information of ASA Members, the American Standards Association gives here a list of standards received by the ASA Library during the last month. The list below includes only those standards which the ASA believes are of greatest interest to Members.

These standards may be consulted by ASA Members at the ASA Library, or copies may be obtained from the organization issuing the standard. The address of the organization is included for your convenience in ordering.

Associations and Technical Societies

Copper & Brass Research Association (420 Lexington Ave., New York 17, N. Y.)

Manual of Standards:
- Index, revised October 12, 1944
- Rod-1, revised October 12, 1944
- Rod-3, revised July 13, 1944 and Rod-3-A, approved July 11, 1944
- FP-5, revised April 25, 1944 and FP-5-A, revised June 6, 1944
- FP-7 (new), approved November 14, 1944
- Data-68, -69, Estimating Data, Condenser and Other Heat Exchanger Tubes

U. S. Government

Federal Specifications Executive Committee (U.S. Treasury Department, Washington, D. C.)

(Copies available from Superintendent of Documents, Government Printing Office, Washington, D. C.)

As a service to Company Members, the ASA maintains a sale file of all Federal Specifications. These specifications can be purchased from the ASA Sales Department.

Braces: Ratchet (Amendment 1) (superseding E-GGG-B-671a, 4-12-43) GGG-B-671a December 1, 1944 5¢

Clay; Fire, Ground (superseding HH-C-451a) HH-C-451b December 1, 1944 5¢

Hooks, Grass (Sickles) (New) GGG-H-608 December 1, 1944 5¢

Metals; General Specification For, Inspection of (Amendment 2) (superseding Amendment 1) QQQ-M-151a December 15, 1944 5¢

January, 1945

ASA Company Member Service

American Standards Association — 70 East 45th Street, New York 17, N. Y.

Application for New Standards

(Must be returned by April 1, 1945)

Company Members of the American Standards Association are entitled to one free copy of each newly approved American Standard for the first $50 of annual membership, and an additional copy for each $100 beyond this.

NAME ..... STREET .....

Person eligible to return list (We can give you his name, if necessary)

COMPANY ..... CITY AND STATE .....

How to Order Your American Standards

- Find out who in your company has been named as representative to return this application.
- Check the standards you want.
- Give your list to your company representative, who will return it to us.
- Your company is entitled to a special membership discount of 20 percent on copies over and above your quota of standards furnished by ASA without charge as part of its services to company members. (For explanation of quota, see above.)

No. of Copies	ASA Number	Sponsor's Number	Title of Standard	Price
	L18.14-1944		Asbestos Aprons (Bib Type) — American War Standard Specifications for Protective Occupational (Safety) Clothing	
	L18.15-1944		Asbestos Cape Sleeves and Bibs — American War Standard Specifications for Protective Occupational (Safety) Clothing	
.....	L18.16-1944		Asbestos Leggings (Knee and Hip Length) — American War Standard Specifications for Protective Occupational (Safety) Clothing	.30
	L18.17-1944		Asbestos Coats — American War Standard Specifications for Protective Occupational (Safety) Clothing	
.....	Z12.2-1944		Prevention of Dust Explosions in Starch Factories, Safety Code for the	
.....	Z12.15-1944		Code for Explosion and Fire Protection in Plants Producing or Handling Magnesium Powder or Dust	
			(the above two American Standards are included with thirteen others on Dust Explosions)	1.00
	Z24.3-1944		Sound Level Meters for Measurement of Noise and Other Sounds	.25
.....	Z52.15-1944		Method of Making Intermodulation Tests on Variable Density 16-Mm Sound Motion Picture Prints (American War Standard)	.10
.....	Z52.39-1944		Method of Making Cross-Modulation Tests on Variable Area 16-Mm Sound Motion Picture Prints (American War Standard)	.10

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.....	Z52.39-1944		Method of Making Cross-Modulation Tests on Variable Area 16-Mm Sound Motion Picture Prints (American War Standard)	.10

Revised Code Tells How To Protect Against Lightning

by W. W. Lewis[1]

Chairman, Sectional Committee on Code for Protection Against Lightning, C5

IT is estimated by the National Fire Protection Association that lightning causes approximately 30,000 fires a year in the United States, with a loss of about $10,000,000. With proper protection, this loss could be reduced to a negligible amount. It is also estimated that lightning kills at least 400 people in the United States each year and injures more than twice that number. A substantial percentage of these could be saved, if people knew and would observe the best precautions.

Under the sponsorship of the American Institute of Electrical Engineers and the National Bureau of Standards, Sectional Committee C5, organized through the procedure of the American Standards Association, formulated the Code for Protection Against Lightning, through which the necessary precautions are made available. During the present year a third sponsor, the National Fire Protection Association, has been added.

The Code consists of three parts. Part I, Protection of Persons, and Part II, Protection of Buildings and Miscellaneous Property, were approved in 1937 as American Standards, but Part III, Protection of Structures Containing Inflammable Liquids and Gases, was approved only as an American *tentative* standard.

The Code as a whole contains recommendations for the protection of persons, buildings, spires, steeples, flagpoles, water towers, silos, smokestacks, hangars, aircraft, ships, trees, livestock, oil tanks, and earthen containers.

Part III Revised

The sectional committee has recently completed an extensive revision of Part III, and on September 7, 1944, this part was also approved as an American Standard.

Part III, revised, covers the protection of structures containing flammable liquids and gases. Protection of such structures and their contents involve the following fundamental principles: The storage of flammable liquids and gases in all-metal structures, essentially gas tight; the closure or protection of vapor or gas openings against entrance of flames; the avoidance of spark gaps between metallic conductors at points where there may be an accumulation of flammable vapors or gases; the location of structures not inherently self-protecting in positions of lesser exposure with regard to lightning; and in connection with structures not inherently self-protecting, the establishment

[1] Transmission Engineer, Central Station, Engineering Division, General Electric Company, Schenectady 5, N. Y.

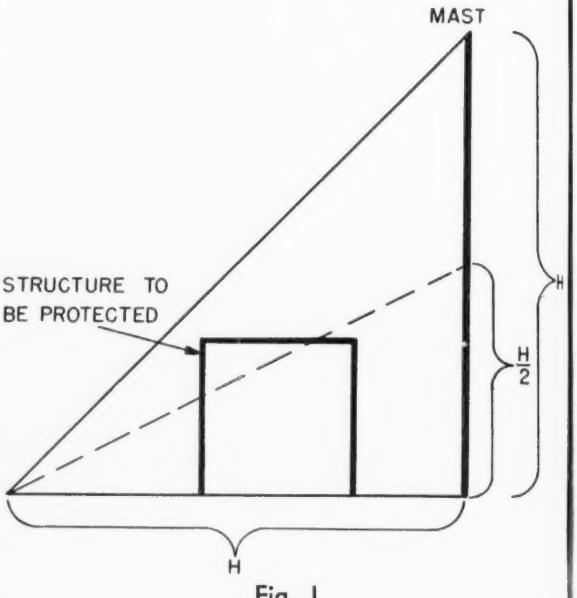

Fig. 1

The cone of protection

H = height of protective mast and also the radius of the base of the cone of protection.

of zones of protection through use of grounded rods masts, or the equivalent.

Steel tanks with steel roofs, and steel tanks with floating metal roofs which are electrically bonded to the tank, are considered to be self-protecting against lightning discharges, providing that they conform to the following specifications: All joints riveted and

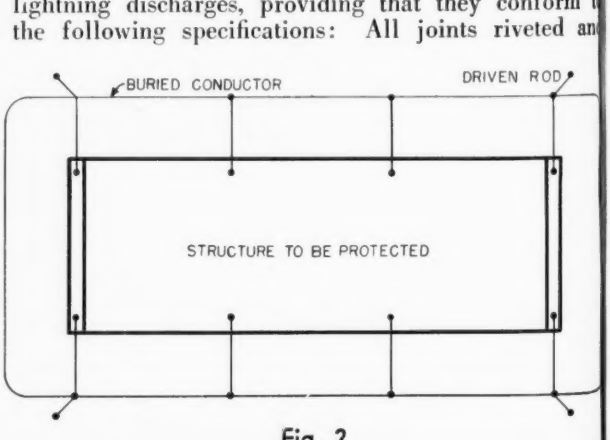

Fig. 2

Method of grounding by means of buried conductor and ground rods.

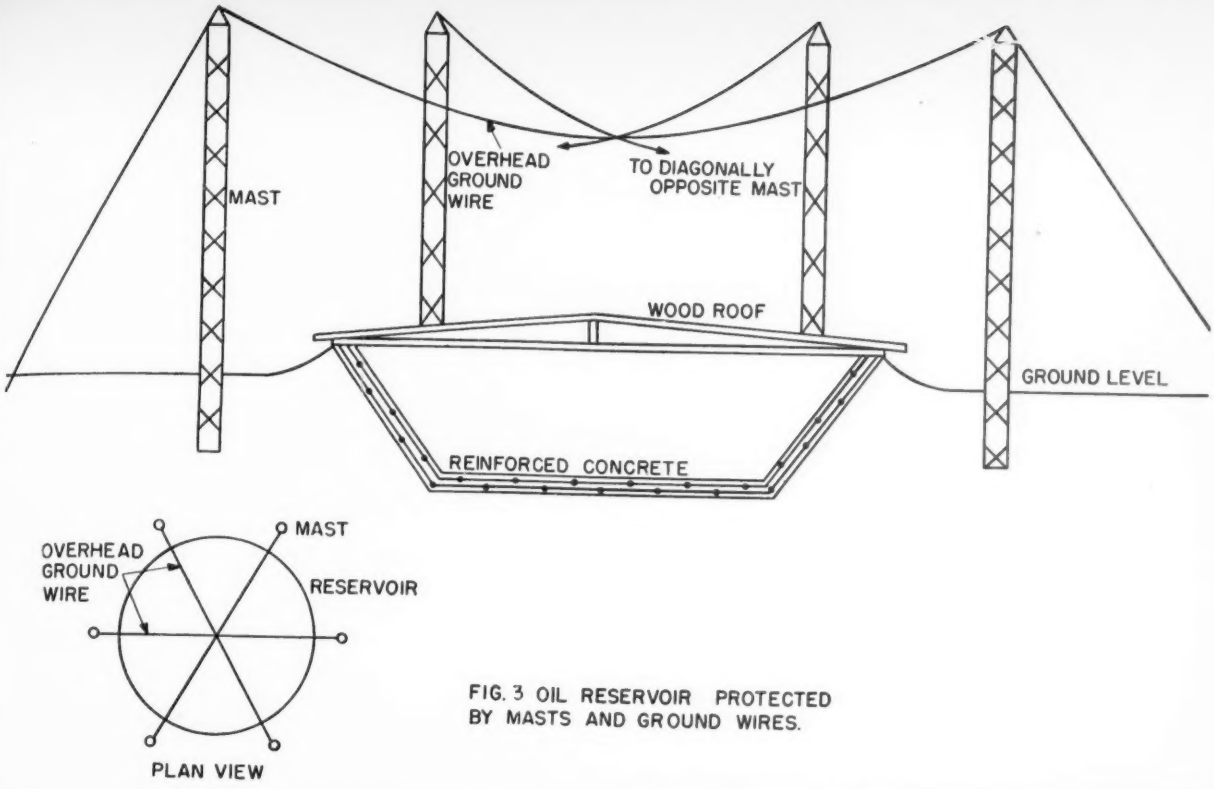

FIG. 3 OIL RESERVOIR PROTECTED BY MASTS AND GROUND WIRES.

calked, or welded; all pipes electrically connected to the tank at point of entrance; all vapor or gas openings closed or flameproofed; the metal tank and roof to have adequate thickness, so that holes will not be burned through by lightning strokes; and the steel roof to be in intimate electrical contact with the tank or well bonded to the tank.

How to Protect Structures

All structures with the exception of those mentioned above require protection. Such protection may be in the form of air terminals on the structure of sufficient height and number to receive all strokes and keep them away from the roof. Air terminals should be thoroughly bonded to each other and to the tank, and the tank should be well grounded. Grounding may be accomplished by connection to water systems or by means of driven rods or buried counterpoise wires (Fig. 2). Steel tanks which are in intimate contact with the ground are sufficiently well grounded inherently.

In lieu of air terminals, conducting masts may be used, suitably spaced around the tank; or overhead ground wires; or a combination of masts and overhead ground wires (Fig. 3).

The cone of protection afforded by rods or masts is assumed to have a radius of base equal to the height of rod or mast in important cases or up to twice the height in less important cases. Likewise, the zone of protection in the case of overhead ground wires is taken as a triangular prism or wedge, with the ratio of one-half base to height ranging between one and two. No part of the structure to be protected should extend outside of the cone of protection (Fig.1).

A list is given of terms and definitions applying specifically to the structures, materials, and contents involved in Part III. A bibliography is also given of twenty papers and articles pertinent to the subjects discussed in this Part.

Members of the Sectional Committee on Code for Protection Against Lightning

W. W. Lewis, American Institute of Electrical Engineers, *Chairman*

American Institute of Electrical Engineers, *W. W. Lewis; Wills Maclachlan; G. D. McCann, Jr.*
National Bureau of Standards—U. S. Department of Commerce, *F. B. Silsbee; John A. Dickinson.*
American Gas Association, *W. C. Beckjord.*
American Institute of Architects, *Theodore Irving Coe.*
American Petroleum Institute, *D. V. Stroop.*
American Transit Association, *W. J. Quinn; P. V. C. See (Alternate).*
Association of American Railroads—Operating Division—Telephone and Telegrarph Section, *J. L. Niesse.*
Electric Light and Power Group, *R. N. Conwell, A. E. Silver; W. C. Wagner; A. B. Campbell (Alternate).*
Institute of Makers of Explosives, *C. H. Fisher; F. R. Wilson (Alternate).*
International Municipal Signal Association, Inc., *Adin W. Chase.*
Lightning Rod Manufacturers' Association of the United States of America, *B. C. Burkett.*
The National Conservation Bureau, *Holger Jensen; Roger T. Waite (Alternate).*
National Electrical Manufacturers Association, *V. E. Goodwin.*
National Lightning Rod Manufacturers Association, *S. D. Kretzer.*
National Safety Council, *Frank E. Epps; William F. Rooney (Alternate).*
Postal Telegraph-Cable Company, *J. J. Lynch; J. C. Fricke (Alternate).*
Telephone Group, *J. S. Baker; W. L. Cook; A. H. Schirmer.*
Underwriters' Laboratories, Inc, *C. R. Welborn; W. J. Alcock (Alternate).*
U. S. Army Ordnance Department, *Wm. M. Wiesenberg.*
U. S. Department of Commerce—Weather Bureau, *R. N. Covert.*
U. S. Navy Department Bureau of Yards and Docks, *W. G. Hill.*
Western Union Telegraph Company, *L. H. Rovere.*

Coordination of Building Units Planned for Post-War Building

by M. W. Adams[1]

Secretary, Committee on Coordination of Building Materials and Dimensions, ASA Project A62

PLANS are now well under way for the use of more efficient building techniques in post-war construction—techniques based on coordinated dimensions of building materials and building equipment, with correlated dimensions in the design of the building itself.

Post-war building affords a tremendous opportunity to realize economy and simplification through coordination, and the steps already taken indicate that those concerned with building are interested in putting the proposed American Standard method of coordination (now being developed through ASA Project A62) into effect. This method is being worked out by a sectional committee under the sponsorship of the Producers' Council and the American Institute of Architects, and with the help of the Modular Service Association.

Already, while the method is still in the formative stages, the Producers' Council has organized a Post-war Technical Committee and a Subcommittee on Modular Products to acquaint the industry with the work and accomplishments of ASA Project A62. The American Institute of Architects, the Structural Clay Products Institute, the Metal Window Institute, and other manufacturers of materials and building units, have gone on record for the use of the proposed American Standard method, and several buildings for post-war construction are now being laid out on this basis by the Department of Public Works of the City of New York.

Committee Widely Representative

The work of Project A62 was started in 1939 following a general conference called by the American Standards Association, which unanimously recommended that the ASA organize a project for the coordination of building materials and equipment. The sectional committee working on the project, as is customary with committees under the procedure of the ASA, is representative of all groups concerned.

After careful study, the committee adopted as the basis for its work the principle of modular design evolved by Albert Farwell Bemis, which has been continued since his death by the Modular Service Association. This Association, an organization set up by Mr. Bemis' heirs, is now cooperating closely with the ASA committee, and is furnishing secretarial and technical service for the benefit of the sectional committee and its study committees.

The method of coordination on which the committee is working has already been applied with outstanding success to certain types of prefabrication. This application has been a special and limited use of principles which actually apply broadly to the factory production of all building materials and equipment that are or may be made in standard sizes. The proposed American Standard method of coordination states the principles which guide manufacturers in determining coordinated sizes for their products, and which assist architects in laying out buildings and in designing details that fit these sizes. Careful planning on the basis of these principles, and use of specifications which call for standard coordinated materials, permit the builder to erect a building with little or no cutting or changing. This not only saves time, but also reduces the waste in materials which is inevitable when the pieces and parts delivered to the building site do not fit.

Parts Standardized—Not the Building Itself

This method standardizes the parts without standardizing the building and thus leaves the architect free to plan his building in any way he pleases, since his only restriction is the use of a small, convenient layout unit.

Advantages of this system are expected to be many and varied, although the advantages for various producing industries differ widely. No two are exactly alike. The following advantages may be expected when the method is applied to certain manufacturing situations, although not in each industry alike:

- Elimination of duplicating or overlapping stock sizes
- Nation-wide standards instead of sizes fixed by local customs in different sections of the country
- Solution of standardization problems which have previously been sought without success
- Stimulated demand for stock sizes in preference to special sizes, as a result of their more convenient use and economical field erection
- Lower costs of manufacturing against stock as compared with the custom manufacture of special details and sizes
- Improved precision and uniformity of quality that result from improved manufacturing processes
- A market for new building materials where the cost of special detailing or field cutting would be prohibitive
- Help for the manufacturer in controlling the application of his products and avoiding complaints that arise from faulty installation

It is expected that the architect who uses the standard method of coordination will find the following advantages:

- A simplified method of making his building layout which will reduce drafting time
- The possibility of changing specifications and substituting alternate materials and constructions without redrawing his layouts

[1] Executive Secretary, Modular Service Association.

The elimination of the designing and the repetitive redrawing of structural assembly details

The better availability of many building products through their improved standardization with a consequent simplification in specifications

The replacing of special details by stock items, so that the redesigning and detailing for these items may be simplified

Easier supervision of the job as a result of standard building practice

The unity of design that results from the application of a single dimensional unit, both vertically and horizontally, to the building structure, openings, and finish, and to various exterior features such as garden walls

The builder himself will receive additional benefits from coordination, it is expected. Among these are:

The improved clarity and accuracy of standard coordinated assembly details

The simplification of estimating which will be made less laborious and more accurate by the elimination of fractional inches and probably by the tabulation of nominal areas

Lower cost of field erection by the reduction of field cutting and fitting

The possibility of developing uniform building practice with better control of field operations

The committee proposes a standard layout unit or module of 4 inches as the basis for coordination. All building plans and assembly details will be related to the same standard 4-inch grid. The sizes of materials and equipment items, which are the parts thus assembled, will be consistent with these details. This three-dimensional grid provides the architect and draftsman with a simple, convenient, and uniform method of referencing and dimensioning drawings. It constitutes a simplified drafting technique. Dimensions between parallel grid lines are 4-inch multiples called "grid dimensions" and may be used for building layout.

These principles are stated in more or less general terms in the Proposed American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1, which has been circulated for review and criticism before final approval. "Application standards" which apply this basis to particular building products are now being prepared by several working committees.

The practical application of the method involves a balance between economy in the use of materials and the versatility and flexibility needed for design, on the one hand; and, on the other, considerations of economy derived from improved standardization and simplification of procedure in design and field erection.

The plan in Figure 1 is a typical layout using only grid dimensions. These dimensions establish a com-

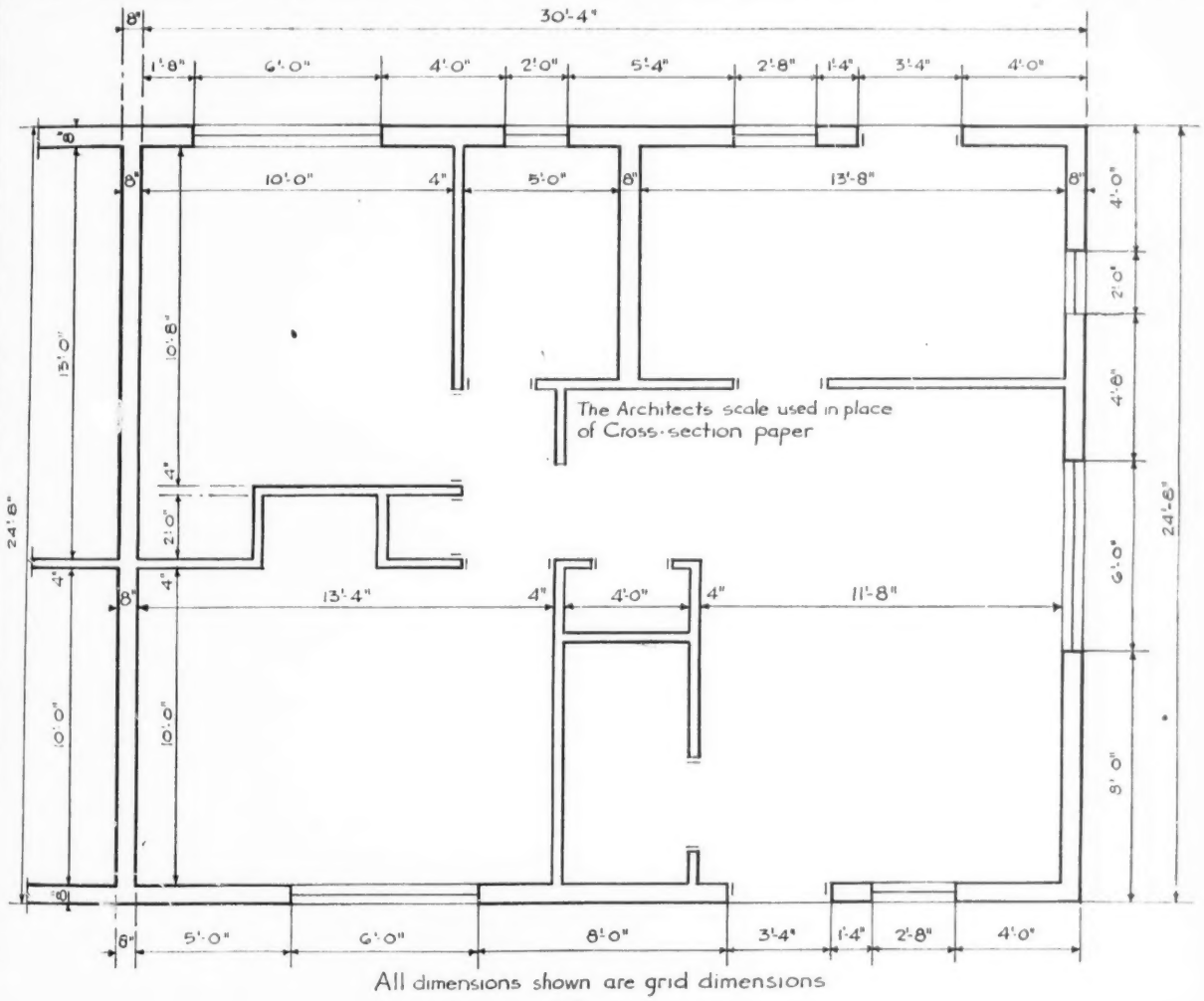

Fig. 1

These dimensions establish a grid relationship and show how this is done without using cross-section paper. Grid dimensions approximate actual dimensions.

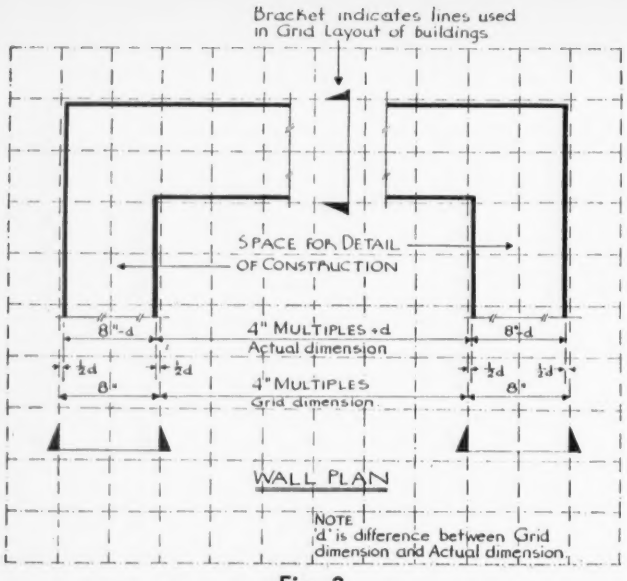

Fig. 2
Grid lines used for grid dimensions are identified by brackets to emphasize close correlation between modular details and building layout.

plete grid relationship and show how this is done without using cross-section paper. Grid dimensions approximate the actual dimensions.

An assembly detail is referenced to the grid by dimensions that give the exact locations for the materials and equipment relative to grid lines. A detail thus referenced is called a "modular detail." Dimensions showing referencing to grid lines are an essential part of a modular detail. If the dimensions to grid lines are altered for a particular assembly of building parts, each different grid location requires an individual modular detail. Hence, for simplicity in design and field erection, it is essential to maintain a specific grid location for each detail.

Figure 2 illustrates the dimensions on modular details by which the referencing to the grid is accomplished. The grid lines which are used for grid dimensions are identified by the bracket symbol. This emphasizes the close correlation between modular details and the building layout.

Designer May Select Any Grid Line

Freedom for the designer to select any grid line or grid dimension in developing the building plan constitutes a 4-inch flexibility of layout. This 4-inch flexibility applies to wall lengths and heights, room sizes, and sizes and locations of openings, and provides a variety of dimensions that is adequate for these purposes. This 4-inch flexibility does not apply to thicknesses of wall or floors, however. These dimensions are governed by considerations of economy, including the efficient manufacture and use of building materials.

The method of referencing each type of building product to the grid is to be established by the "application standards" now being prepared for the various materials and equipment. Specific rules for referencing to the grid which would apply to all types of building products would be impracticable, the committee believes. Each type of building product involves its own peculiar problems, and, consequently, the methods of referencing may differ in detail.

The work of the committee has already progressed to the point where this basis for coordination has been applied to masonry units. A standard unit-plus-joint dimension provides a uniform and convenient layout unit for the correlation of building dimensions. The coordination of masonry will permit the combination in one wall of various classes of masonry, using different thicknesses of mortar joints, the committee announces. Standard coordinated units and shapes will permit the construction of jambs and heads of masonry openings that are satisfactory for the installation of standard coordinated building products such as doors and windows.

The methods by which this would be accomplished are stated in the Proposed American Standard Basis for the Coordination of Masonry, A62.2, which has already been circulated for review.

Other Standards Being Developed

Other application standards are being developed by study committees covering wood and metal windows, wood doors, natural stones, structural wood, structural steel, miscellaneous metal products, masonry partitions, cast-in-place concrete, window accessories, glass block, and building layout.

The work of the committees is already receiving wide attention.

The American Institute of Architects is taking steps to keep its members informed of the progress of the committee and how the project applies to their work.

The Structural Clay Products Institute is distributing information about the method to its members, and the Hudson River Brick Manufacturers Association and the Facing Tile Institute have passed resolutions assuring that their products will be available in modular sizes without increased cost for use in post-war projects now being planned. A similar resolution has been passed by Colonial Clays, Inc, of New England. New York City is using the method in the design of sev

Proposed Standards Available

The two proposed standards which have already been completed by committee A62 and which have already been distributed for comment are:

Proposed American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1.

Proposed American Standard Basis for the Coordination of Masonry, A62 2

Subcommittees now working on other standards cover:

Masonry made of structural clay products
Wood doors and windows
Masonry made of concrete and cast stone
Metal windows
Natural stones, including granite, limestone, and marble
Structural wood
Building layout
Structural steel
Miscellaneous metal products (excluding doors and windows)
Masonry partitions
Cast-in-place concrete
Window accessories
Glass block

eral of its important post-war buildings. It is also being used for at least one hospital for immediate construction.

Greatest Step Toward Coordination

The metal window industry has just completed the coordination of all solid-section steel windows, with the single exception of light-weight housing casements. Producers are issuing catalogs showing these coordinated sizes for a vast range of products, including residential, architectural, and industrial types, casements, and projected and pivoted sash. All these products will fit interchangeably in standard prepared masonry openings. Their installations provide convenient removability. The simple 4-inch layout applies to them all. The committee believes that this, combined with the masonry coordination, constitutes probably the greatest step ever taken by the building industry towards simplification and economy.

The wood window and door industry has about completed a similar accomplishment for its products and announcement of it is expected within a few months.

Great Britain Favors Method

In addition to this acceptance in the United States, the method is also receiving international recognition. The British Committee for the Industrial and Scientific Provision of Housing, which visited the United States and made a study of the project, has issued a report which favors consideration of the method in connection with the post-war construction program in Great Britain.

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Metal Window Institute Adopts Coordinated Standard Sizes

Use of metal windows in tomorrow's buildings will be greatly simplified, and considerable savings effected, as a result of the coordination of window designs and dimensions, and reduction in number of standard types just approved by the member-manufacturers of the Metal Window Institute, it has just been announced. The sizes of non-residential metal windows are coordinated with the standards now being developed under the auspices of the American Standards Association and sponsored by the American Institute of Architects and the Producers' Council.[1] Announcement of this streamlined program of standardization is made by George Hingston, executive secretary of the Institute, whose members represent more than 90 percent of the country's productive capacity in this field.

Two Groups of Window Standards

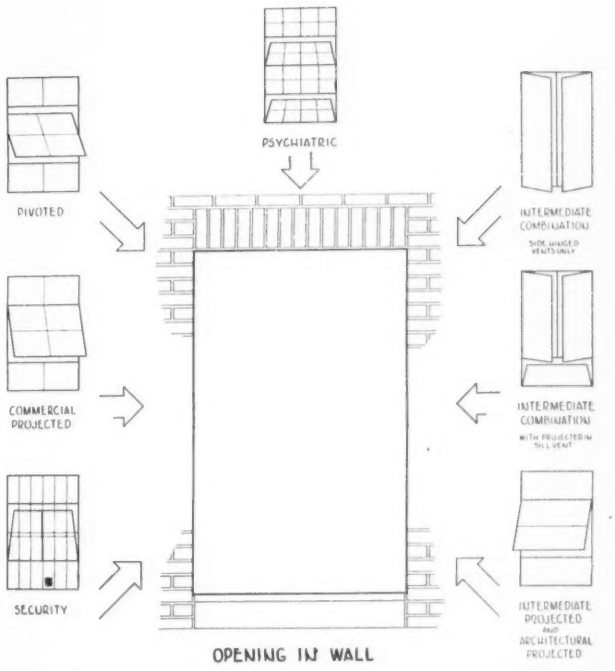
Standardization of metal windows falls into two groups:

1. Residence casements will be manufactured in dimensions especially suited for residential construction.

2. Non-residential windows of different kinds and makes, such as Intermediate Projected, Intermediate Combination, Psychiatric, Security, Pivoted, Commercial Projected, Architectural Projected, and Housing Windows, will be designed in uniform standard sizes, and will be interchangeable in the wall opening. This will allow architects to lay out the window openings, and later determine the kind of window to be used without having to redraw plans; nor will a change in window types alter the collateral materials.

Installation details for metal non-residential windows have also been standardized, to make it simple to adapt windows to collateral construction and insure proper and long-lasting installation. Prepared openings will permit installation of windows after much of the rough work is completed.

With uniform types and sizes of metal windows, production economies will be brought about that will bring better values to the building owner. Costs of accessory materials such as screens, shades, and glass should also be lowered as a result of standardization of window sizes.



With fewer types and sizes of metal windows, it will be simpler to maintain complete warehouse stocks, and deliveries from stock should therefore be expedited. There will be a stimulated demand for stock sizes in preference to special sizes as a result of their more convenient use and economical installation.

The program of the Metal Window Institute is in keeping with the general movement towards simplification and reduction of cost of building construction, to help the giant building industry contribute its full share towards post-war prosperity.

[1] Coordination of Building Materials and Dimensions, ASA Project A62.

New Standards from Other Countries

THE following new and revised standards, just received by the American Standards Association from other countries, may be borrowed by ASA Members from the ASA Library or purchased through the ASA Sales Department.

Great Britain

New British Standards

Clay Flue Linings and Chimney Pots Suitable for Open Fires BS1181:1944 75¢
Concrete Bricks and Fixing Bricks BS1180:1944 75¢
Glossary of Terms Used in the Gas Industry BS1179:1944 $1.25
Precast Concrete Blocks 75¢
  Solid Partition Blocks BS492
  Hollow Partition Blocks BS728
  Blocks for Rendered Walls BS834
Production Control in the Small Factory BS100:1944 75¢
Tramway and Dock Rails and Fishplates BS2:1944 $1.85

Drafts of Proposed British Standards

Asbestos Cement Flue Pipes and Fittings for Gas Fired Appliances CG(ASB)7163
Cast Iron Gutters and Fittings CG(HIB) 7341
Clayware Field Drain Pipes CG(CLB) 7671
Code of Functional Requirements for Building:
  Chapter IA Daylight
  Chapter VIII Heating and Heat Insulation
Concrete Porous Pipes CG(CEB)7091
Draining Boards CG(HIB)8343
Fireclay Sinks CG(HIB)8341
Glass Bricks CG(B)7585
Glass Internal Sills to Wood and Metal Windows CG(B)7584
Grading and Sizing of Tongued and Grooved Flooring CG(TIB) 7986
Hinges CG(HIB)7311
Hollow Clay Blocks for Structural Floors and Roofs, Part II CG(CLG) 7720
Iron and Steel Bolts CG(HIB)7595
Jointing Compound for Threaded Joints, Domestic Gas Appliances and Gas Installation Pipes CG(GS)7682
Kitchen Fitments and Equipment CG(B)8036
Locks for Doors CG(HIB)7384
Magnesium Alloy Ingots and Castings CG(NF) 7552
Metal Sinks CG(HIB)8339
Methods of Testing Clay Bricks CG(CLB)8418
Pre-Cast Concrete Flue Blocks for Gas Fires and Ventilation CG(CEB) 7992
Proof Test for Creep Quality of Boiler Plate Steel CG(IS)-8227
Sizes of Natural Stone for Building CG(STB)6928
Synthetic Resin (Aminoplastic) Moulding Materials and Mouldings CG(PLC)7846
Synthetic Resin Adhesives for Wood CG(ADC) 7468
Tarmacadam and Tar Carpet CG(RD) 8126
Tarmacadam Gravel Aggregate CG(RD) 8128
Tarpaving CG(RD) 8127
Wallpapers CG(PAC) 7363
Timber Laths for Plastering CG(TIB)8371
Wall Ties CG(HIB)7615
Wood Preservatives CG(WPC)8456

Draft Revisions of British Standards

Air-Bricks and Gratings CG(HIB) 796.0 (Rev. of BS493)
Asbestos Cement Flue Pipe and Fittings (Heavy Quality) for Heating and Cooking Appliances CG(ASB)7164
Cast Iron Light Rainwater Pipes CG(HIB) 7344 (Rev. of BS460)
Cast Iron Soil, Waste, Ventilating, and Heavy Rainwater Pipes CG(HIB) 7342 (Rev. of BS416)
Cement Concrete Cylindrical Pipes, Tubes and Fittings CG(CEB)7090
Copper Cylinders for Domestic Purposes CG(HIB)7513
Galvanized Mild Steel Cisterns, Tanks and Cylinders (War Emergency Issue) CG(HIB)7515

Draft Revisions of British Standards (Continued)

Grading Rules for Stress Graded Timber CG(TIB) 7227 (Rev. of BS940, Part I)
Porcelain and Toughened Glass Insulators for Overhead Power Lines (Draft Addendum to BS137-1941)
Rot-Proof Jute Hessian Sandbags CG(ARP)7506
Synthetic Resin Adhesives for Wood CG(ADC)7468
Welsh Roofing Slates CG(STB) 7864 (Rev. of BS680)

New War Emergency Standards

B. A. Bolts, Screws, Nuts and Washers BS57:1944 75¢

Drafts of Proposed War Emergency Standards

Whiting Putty CG(B) 7356

Draft Revisions of War Emergency Standards

Concrete Railway Sleepers CG(CEB) 7783

Australia

Deoxidised Copper Cakes and Billets No. H18-1944
Electrodes for Metallic Arc Welding, Draft Rev AS B.28
Filler Rods for Oxy-Acetylene Welding, Draft Rev AS: B.2

New Zealand

Building By-Laws:
  Means of Egress NZSS 95, Part VII, February, 1944
  Residential Building NZSS 95, Part VIII, October, 1943
  Light Timber Construction NZSS 95, Part IX, February, 194

Emergency Standard Specifications

Household Furniture E159
Second Hand Sacks and Bags E154
Soft Solder E114
Lead-Acid Storage Batteries E155

AGA Laboratories Damaged In Cleveland Fire

The American Standards Association learns with regret that the American Gas Association Testing Laboratories suffered severe damage in the recent serious Cleveland fire, and that eight of the Laboratories' employees were injured. The fire reached the Laboratories in a few seconds after the explosion of the gas tanks completely gutted all offices, and destroyed almost all records and research data. A few testing and inspection files were charred but are still usable, it is reported.

Loss of records and the necessity of checking equipment including miles of piping, before returning it to service, will require considerable time before research and testing activities can be resumed on a normal basis the Association reports. Operations connected with the production of automatic oxygen regulators for the Army Air Forces are being given top priority.

The American Gas Association has been a Member Body of the American Standards Association for many years, and is sponsor for the important project on gas-burning appliances, Z21.

Department of Interior Appoints Wilhelm on Standards Council

F. E. Wilhelm, liaison representative, Branch of Design and Construction, Bureau of Reclamation, has been appointed as a representative of the Department of the Interior for 1945-1947 on the Standards Council of the American Standards Association to succeed Louis R. Douglass, recently transferred. M. A. Seiler, assistant liaison representative for the Branch of Design and Construction, has been designated to serve as alternate on the Standards Council in place of Thomas H. Wiglesworth.

ASA Standards Activities

American Standards

Standards Available

For New American Standards available during the past month, see page 17.

Standards Approved Since Our December Issue

Alloy-Steel Castings for Valves, Flanges, and Fittings for Service at Temperatures from 750 to 1100 F, Specifications for (Revision of ASTM A 157-42; ASA G36.1-1942)

Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for Service at Temperatures from 750 to 1100 F, Specifications for (Revision of ASTM A 182-40; ASA G37.1-1942)

Sponsor: American Society for Testing Materials

Wires and Cables, Definitions and General Standards (Revision of C8.1-1932)

Sponsor: Electrical Standards Committee

Standards Being Considered by ASA for Approval

Abrasion of Coarse Aggregate by Use of the Los Angeles Machine (Revision of ASTM C 131-39; ASA A 37.7-1943)

Ductility of Bituminous Materials (Revision of ASTM D 113-39; ASA A 37.11-1943)

Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses (Revision of ASTM A 120-42; ASA G8.7-1943)

Carbon-Steel Castings for Miscellaneous Industrial Uses (Revision of ASTM A 27-42; ASA G50.1-1943)

Carbon-Steel Plates for Stationary Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 70-42; ASA G29.1-1942)

Carbon-Silicon Steel Plates of Ordinary Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Specifications for (Revision ASTM A 201-43; ASA G31.1-1943)

Chrome-Manganese Silicon (CMS) Alloy-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 202-39; ASA G32.1-1943).

Low-Carbon Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 203-42; ASA G33.1-1942)

Methods of Testing Wool Felt (Revision of ASTM D 461-40; ASA L16.1-1942)

Molybdenum-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (Revision of ASTM A 204-42; ASA G34.1-1942)

High Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels (Plates 4½ In. and Under in Thickness), Specifications for (Revision of ASTM A 212-39; ASA G35.1-1942)

Shrinkage in Laundering of Woven Cotton Cloth, Reaffirmation of American Standard Methods of Test (Reaffirmation of ASTM D 437-36; ASA L10-1936)

Sponsor: American Society for Testing Materials

Standards Being Considered by ASA for Reaffirmation and Reapproval

Basic Sulfate White Lead, Specifications for (ASTM D 82-41; ASA K47-1941)

Concrete Building Brick, Specifications for (ASTM C 55-37; ASA A75.1-1942)

Concrete Masonry Units, Methods of Sampling and Testing (ASTM C 140-39; ASA A84.1-1942)

Concrete Masonry Units for Construction of Catch Basins and Manholes, Specifications for (ASTM C 139-39; ASA A73.1-1942)

Hollow Non-Load-Bearing Concrete Masonry Units, Specifications for (ASTM C 129-39; ASA A80.1-1942)

Mild Steel Plates, Specifications for (ASTM A 10-39; ASA G20-1939)

Sand-Lime Building Brick, Specifications for ASTM C 73-39; ASA A78.1-1942)

Steel for Bridges and Building, Specifications for (ASTM A 7-42; ASA G24-1942)

Structural Clay Floor Tile, Specifications for (ASTM C 57-39; ASA A77.1-1942)

Structural Clay Tile, Methods of Sampling and Testing (ASTM C 112-36; ASA A83.1-1942)

Structural Rivet Steel, Specifications for (ASTM A 141-39; ASA G21-1939)

Structural Silicon Steel, Specifications for (ASTM A 94-39; ASA G41.1-1942)

Sponsor: American Society for Testing Materials

American War Standards

American War Standards Available

For new American War Standards available during the past month, see page 17

American War Standards Approved Since Our December Issue

Acme Screw Threads B1.5-1945

Photography and Cinematography Z52

Nomenclature for Motion Picture Film Used in Studios and Processing Laboratories Z52.14-1944

Specification for Photographic Flash Lamps Z52.43-1944 and Supplement Z52.43a-1944

Protective Occupational (Safety) Clothing L18

Asbestos Aprons (Bib Type) L18.14-1944

Asbestos Cape Sleeves and Bibs L18.15-1944

Asbestos Leggings (Knee and Hip Length) L18.16-1944

Asbestos Coats L18.17-1944

War Standards Under Way

Color Code for Lubrication of Machinery Z47

Cylindrical Fits B4.1

War Standards Under Way (Continued)

Linemen's Rubber Protective Equipment J6

Machine Tool Electrical Standards (Revision of C74-1942)

Photography and Cinematography Z52

Specification for Class II Service Model 16-Mm Sound Motion Picture Projection Equipment Z52.13

Specification for Photographic Contact Printer Z52.18

Specification for Photographic Enlarger Z52.23

Specification for Projectors of Slides and Slide Film Z52.28

Specification for 35-Mm Slide Film for Use in Still Picture Projectors Z52.29

Specification for Leaders, Cues and Trailers for 16-Mm Sound Motion Picture Release Prints Processed from Original 16-Mm Material Z52.31

Specification for Warble Test Film Used for Testing 16-Mm Sound Motion Picture Equipment Z52.32

Specification for 16-Mm Motion Picture Film Reels Z52.33

Dimensions for Film-Reel Spindles for 16-Mm Sound Motion Picture Equipment Z52.34

Sound Records and Scanning Area for 35-Mm Sound Motion Picture Prints Z52.36

Photography and Cinematography Z52 (Continued)
- Method of Determining Signal-to-Noise Ratio of 16-Mm Sound Motion Picture Prints Z52.38
- Method of Determining Printer Loss in 16-Mm Sound Motion Picture Prints Z52.40
- Sizes of Photographic Projection Screens Z52.41
- Sound Transmission of Perforated Projection Screens Z52.44
- Whiteness of Photographic Projection Screens (Semi-Diffuse Type) Z52.45
- Brightness Characteristics of Photographic Projection Screens (Semi-Diffuse Type) Z52.46
- Specification for Photographing Aperture of 16-Mm Sound Motion Picture Cameras Z52.47
- Specification for Photographing Aperture of 16-Mm Silent Motion Picture Cameras Z52.48
- Specification for Field of View of 16-Mm Motion Picture Camera View Finders Having Parallax Adjustment Z52.49
- Specifications for Registration Distance for Mounting Dimensions of 16-Mm Motion Picture Camera Lenses Z52.50
- Distance Calibration of 16-Mm Motion Picture Camera Lenses Z52.51
- Mounting Dimensions for 16-Mm Camera and Recorder Film Magazines Z52.52
- Location of Synchronization Marks on 35-Mm Motion Picture Release Negatives Z52.53
- Location of Synchronization Marks on 16-Mm Motion Picture Release Negatives Z52.54
- Method of Determining Resolving Power of Slide Film Projector Lenses Z52.55
- Specification for Portable Photographic Projection Screens (Spring-Roller-Mounted) Z52.56

Photography and Cinematography Z52 (Continued)
- Specification for Photographic Projection Screens (Springless Roller-Mounted) Z52.57
- Specification for Photographic Projection Screens (Folding for Portable Frame Mounting) Z52.58
- Specification for Photographic Projection Screens (Auditorium Frame Mountings Z52.59
- Method of Determining Noise Level of Motion Picture Cameras Z52.60
- Photographic Filter Terminology and Nomenclature Z52.61

Protective Occupational (Safety) Clothing L18
- Women's Safety and Powder Caps L18.13
- Leather One-Finger Mittens L18.18
- Leather Mittens L18.19
- Asbestos One-Finger Mittens L18.20
- Flame-Resistant Fabric
  - Aprons (Bib Type) L18.21
  - Leggings (Knee and Hip Length) L18.22
  - Coats L18.23
  - Pants L18.24
  - Coveralls L18.25
  - Spats L18.26
- Leather Spats L18.27
- Asbestos Spats L18.28

Radio Noise, Methods of Measuring C63

Resistance Welding Equipment C52
- Resistance Welding Electrodes and Electrode Holders C52.3
- Specifications for Design and Construction of Resistance Welding Equipment C52.4

Safety Color Code for Marking Physical Hazards Z53

Safety Code for the Industrial Use of X-rays Z54

Screw Threads B1

News About ASA Projects

Building Code Requirements for Chimneys and Heating Appliances (A52)—

Sponsor: National Board of Fire Underwriters.

A meeting of this ASA committee is scheduled for February 23. Reports from three subcommittees which have been working on various parts of the project will be received, as the basis for preparation of a draft standard.

Building Code Requirements for Signs and Outdoor Display Structures (A60.1)—

Sponsors: American Municipal Association; Outdoor Advertising Association of America.

A meeting of the sectional committee will be held February 7 to consider the third draft, of a proposed standard, which has been circulated to the committee members. It is expected that the committee will also elect officers for the coming year and consider whether changes in personnel are desirable.

Surface Roughness, Waviness, and Lay (B46)—

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers.

A proposed American Standard for Surface Roughness, Waviness, and Lay has been prepared by the Special Subcommittee on Revision and Editing of the Sectional Committee on Classification and Designation of Surface Qualities, B46, for which the American Society of Mechanical Engineers and the Society of Automotive Engineers are joint sponsors. This draft is a revision of the proposed American Standard on Surface Roughness which was made available in printed form in March, 1940 for a trial in practice during a period not exceeding two years.

Copies of the draft revision, now being distributed to interested organizations and individuals for review and comment, can be obtained from the American Society of Mechanical Engineers, 29 West 39th Street, New York 18, N. Y. Suggestions and comments are welcomed and will form the basis for a final review which will be made by the subcommittee before the proposal is submitted to the sectional committee for its approval.

Methods of Measuring Radio Noise (C63)—

Dr. J. J. Smith, General Electric Company, has been appointed chairman of the ASA War Committee on Methods of Measuring Radio Noise, C63. At a meeting of the committee on November 14, 1944, recommendations were made to the Joint Army-Navy Committee on Specifications concerning the October 27, 1944 draft of the proposed Joint Army-Navy Specification, "Radio Interference Measurement (150 Kc to 20 Mc)".

Bedding and Upholstery (L12)—

Sponsor: National Association of Bedding and Upholstery Law Enforcement Officials.

A draft standard on Definitions for Filling Materials Used in Bedding and Upholstery is now out to letter ballot of the sectional committee.

Specifications for Protective Occupational (Safety) Clothing (L18)—

Eight new proposed American War Standards for safety clothing made of flame-resistant fabric, and for spats, are being submitted to the Safety Code Correlating Committee for recommendation to Standards Council on final approval. These standards are:

Flame-Resistant Fabric
- Aprons (Bib Type) L18.21
- Leggings (Knee and Hip Length) L18.22
- Coats L18.23
- Pants L18.24
- Coveralls L18.25

Spats
- Flame-Resistant Fabric Spats L18.26
- Leather Spats L18.27
- Asbestos Spats L18.23

Three proposed American War Standards, previously completed by the War Committee, are now out to letter ballot of the Safety Code Correlating Committee. These are:
- Leather One-Finger Mittens L18.18
- Leather Mittens L18.19
- Asbestos One-Finger Mittens L18.20

afety Color Code for Marking Physical Hazards (Z53)

A meeting of this ASA War Committee is scheduled for Jan- ry 16, at which time a draft of a proposed standard will be nsidered. When approved by the committee the draft will submitted to a wide group of those interested for comment d criticism. Anyone who would like to be placed on this nvass list is invited to write the American Standards Asso- ation immediately.

afety Code for the Industrial Use of X-rays (Z54)—

A draft of the first section of a proposed American War tandard for the protection of personnel working with or near ndustrial X-ray equipment has been sent out to a canvass of a rge group of individuals and organizations concerned. This first section deals with equipment which has already been installed, and the committee is making every effort to complete it quickly in order that it can be of as much help as possible immediately. Other sections concerning the installation of new equipment and the re-location of present equipment will be considered by the War Committee as soon as the first section has been completed.

Building Code Correlating Committee—

The Building Code Correlating Committee will hold its annual meeting February 9 at 10:00 a.m. in Room 2849; 70 East 45 Street, New York.

Mining Standardization Correlating Committee—

The MSCC will hold its annual meeting February 19.

National Bureau of Standards Offers Color Standards

The National Bureau of Standards announces that it s prepared to furnish a number of dry paint pigments o be used as standards for color and tinting strength y those who purchase pigments on the basis of specifi- ations.

The Government agencies, which are large consum- rs of paint and paint materials, have found that in uying colored paint pigments, such as yellow ocher, ienna, umber, etc., two of the most important proper- ies that determine quality are color and tinting trength. For example, two yellow ochers may have he same chemical composition, but may vary widely n color and tinting strength.

Recognizing this problem, the National Bureau of Standards, **with the help of industry,** has set up a eries of standard samples of paint pigments for color nd tinting strength (but not for chemical composi- ion). New Federal Specifications for pigments issued ecently mention these standard samples, and state that hey may be obtained from the Bureau.

List of Samples Available

The following list shows the standard samples that ave been set up, and the corresponding Federal Specifications for these pigments:

NBS No.	Material	Federal Specification
300	Toluidine red toner	TT-T-562
301	Yellow ocher	TT-O-121
302	Raw sienna	TT-S-346
303	Burnt sienna	TT-S-346
304	Raw umber	TT-U-481
305	Burnt umber	TT-U-481
306	Venetian red	TT-V-226
307	Metallic brown	TT-M-251
308	Indian red	TT-I-511a
309	Mineral red	TT-M-381
310	Bright red	TT-I-511a
311	Carbon black (high color)	TT-C-120
312	Carbon black (all purpose)	TT-C-120

These standard samples may be obtained by writing o the National Bureau of Standards, Washington, 5, D. C. The Federal Specifications may be obtained rom the Superintendent of Documents, Government rinting Office, Washington 25, D. C.

Industry and Government Discuss Standardization Roles

Some fifty industrial executives meeting in New York on January 12 at the invitation of the Secretary of Commerce discussed the relative roles which should be played by Government and industry in post-war standards activities. This meeting was called by the Department as a result of criticisms on the inadequacy of function and lack of coverage by existing organizations in the standardization field. Some of these urged that the Department take over and enlarge as a government function the work of standardization hitherto performed by private groups, principally the American Standards Association and its participating and cooperating agencies.

The meeting was opened by Gano Dunn, chairman of the Visiting Committee of the National Bureau of Standards, and was presided over by Wayne Taylor, Under-secretary of Commerce, who welcomed the industrialists and outlined the objectives. He then asked H. B. Bryans, president of the American Standards Association, to take the chair during the discussion.

After an all-day session, the conference unanimously voted five resolutions and recommended the appointment of a committee to serve under the chairmanship of Charles E. Wilson, president of General Electric Company, together with nine other representatives from a wide variety of industries.

The conference expressed firmly the belief that industry should take the initiative in any broadened national standards program with the cooperation and help of government. Also, it expressed the belief that standards were to play a much more important role especially in consumer goods in the nation's economic development in the post-war era; and endorsed in principle the report rendered to the Secretary of Commerce by his special consultant, Carroll L. Wilson, which was largely the basis of the discussion. In conclusion, the conference "noted with approval" the plans already made for an expanded program by ASA and urged their early realization.

At this writing, the minutes to the conference have not been released, but a full report of the conference will be made in the next issue of INDUSTRIAL STANDARDIZATION.

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